

**From clashing to matching:  
examining the legitimation codes that underpin  
shifting views about climate change**

A thesis submitted in fulfillment of the  
requirements for the award of the degree

**Doctor of Philosophy**

by

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## **STATEMENT OF ORIGINAL AUTHORSHIP**

I certify that the work in this thesis has not previously been submitted for a degree and nor has it been submitted as part of the requirements for a degree.

I also certify that the thesis is an original piece of research written by me, except where noted in the text. Any help that I have received in my research work and in the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of candidate:

Eleanor Glenn

***I dedicate this thesis to all the unsung heroes  
working for a brighter future***

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## **LIST OF ABBREVIATIONS**

CCC&E	Climate change communications and engagement
IPCC	Intergovernmental Panel on Climate Change
LCT	Legitimation Code Theory

### **LCT concepts**

ER	Epistemic relations
SR	Social relations
SG	Semantic gravity
SD	Semantic density

## TRANSCRIPTION KEY

- , Short pause in speech
- ... Long pause in speech
- . Downward inflection, marking end of sentence
- ? Upward inflection, marking a question
- ! Sentence ending with strong emphasis
- italics* Strong emphasis on a particular word
- Speech cut short
- { Overlapping speech (e.g. an interruption)
- () Non-verbal (e.g. nodding head, laughter)





## **ABSTRACT**

This study investigates people's views about climate change. It examines how they shift in conversation, and the potential for climate change communications and engagement (CCC&E) to engage with and shift views. Existing research tends to analyze statements of view as the reflections of cognitive processes or social and cultural phenomena, rather than also analyzing the forms taken by knowledge expressed in the statements themselves. The study employs a sociological framework, Legitimation Code Theory, to analyze the organizing principles of statements in the form of different 'legitimation codes'. These represent the organizing principles of statements that are valorized in a particular setting, such as being more strongly based on scientific evidence or on subjective experience, more concrete or abstract, more simple or complex.

The study analyzes modified focus group and interview conversations of a lay group and a group of public policy influencers from think tanks in Australia. Analyses of participants' shifts in views and processes of finding common ground reveal the importance of the legitimation codes underpinning the discussions. Changes in lay participants' statements from dismissing to accepting climate change and responses to it were associated with a shift from a 'code clash' to a 'code match'. Shifts in legitimation codes were also key to the think tank participants finding some common ground despite their ideological differences. Further, the study reconceptualizes the CCC&E strategies of translation and transformation in LCT terms so that translation becomes a 'code match' and transformation a 'code drift' or 'code shift'. Some suggestions for CCC&E are made based on the empirical findings and reconceptualized strategies. For lay audiences, these include emphasizing the personal qualities of climate scientists (translation) or using familiar analogies to communicate the science (transformation); encouraging action on the basis of the good citizen "doing your bit" (translation); and building support for systemic change such as carbon pricing by invoking concepts of fairness and the responsibility of big polluters (transformation). For public policy influencers, translation means retaining their ideological preferences and finding common ground, while transformation requires a change in their modus operandi to weaken the ideological basis if it conflicts with the science.



## **CHAPTER 1: INTRODUCTION**

### **1.1 BACKGROUND TO THE STUDY**

#### **1.1.1 The climate change problem**

Human-induced climate change is a pressing global problem. The Intergovernmental Panel on Climate Change has identified a two degree Celsius increase in average global temperature above pre-industrial levels as a safety ‘guardrail’ beyond which maintenance of climatic conditions that are conducive to human survival becomes increasingly unlikely (IPCC, 2014). However, there is a large and growing gap between this guardrail and our current trajectory towards a global temperature increase of more than four degrees (IPCC, 2014). While there have been some successes in reducing emissions, for example through technological innovations, global emissions continue to rise. Australia, where the present study is situated, is one of the world’s highest per capita emitters of greenhouse gases and the second largest exporter of coal (Australian Government: Department of the Environment, 2015; U.S. Department of Energy, 2014).

It seems clear that more substantial responses to climate change are required, and fast. However, climate change is a pervasive phenomenon with roots in every part of the economy and almost every aspect of our daily lives, and so there are no quick fixes or ‘silver bullet’ solutions. Its pervasiveness also means that everyone is both implicated in contributing to the problem, and can play a role in addressing it. To quote the catchphrase of the September 2014 global climate marches, “To change everything, we need everyone”. More people need to be taking more action on climate change as well as advocating and implementing systemic and structural change through public policy.

The problem is that the nature of climate change itself and its implications for action make it a difficult issue to accept. It is a complex, abstract, intangible, global concept that is difficult to comprehend and relate to individual experience and daily life (Poortinga, Spence, Whitmarsh, Capstick, & Pidgeon, 2011). It may also trigger uncomfortable emotions such as guilt, it may clash with political-ideological preferences for minimal interference in society and in markets, and there are obvious vested interests in polluting industries (McCright & Dunlap, 2010). Together, these factors make for a difficult public debate, featuring opposing and seemingly

irreconcilable views. Thus, better understanding people's views about climate change and appropriate responses to it, might contribute to finding ways forward in the public debate and, ultimately, addressing the problem.

### **1.1.2 Differing views about climate change**

The literature suggests that people hold a range of opinions on whether climate change exists and is a problem worth addressing, and on appropriate responses to it. Surveys in some countries including Australia suggest that large segments of the population dispute the existence of human-induced climate change (e.g. around half in Leviston et al.'s (2011) survey). Other research has identified a wide range of views about appropriate responses ranging from new technologies to risk management policy interventions to reconceptualizing climate change as a social justice issue, amongst many others (Dryzek, 2005; Hulme, 2009). Two significant bodies of literature propose explanations for different groups' views. The psychological literature finds that people's views are shaped by relatively universal cognitive processes as well as by existing values, attitudes, beliefs and identities that vary between people. The sociological literature considers views as reflections of larger-than-individual forces such as sociocultural norms, cultural meanings and discourses, and the political economy. It appears that views about climate change and the forces that shape them are many and varied.

If the aim is to facilitate more people taking more action on climate change, then the question becomes how to engage with the different views, including the views of those who reject climate change. The literature identifies several strategies for dealing with differences in views that, in shorthand, can be termed 'battle', 'avoidance' and 'constructive engagement'. In battle mode, parties with opposing goals for action or inaction or different types of action engage in "discursive battles" (Kurz, Augoustinos, & Crabb, 2010) that attempt to establish a particular view as the right one, in the public sphere and in policy circles. While some countries enjoy relative bipartisan political support for action, in others, such as Australia and the US, climate change has become a partisan political issue. In Australia, the climate change issue has been implicated in the downfall of two Prime Ministers and a Leader of the Opposition, because of the stance each took on carbon pricing (Hartcher, 2013; Suter, 2010). After introducing carbon pricing in 2012, Australia became the world's first developed country to revoke carbon pricing following a change of government in 2014.

As an example of an ‘avoidance’ strategy, the Australian Government under Labor Prime Minister Gillard sought to avoid mentioning climate change and instead used the term “Clean Energy Future” in communications about its carbon pricing policy. The problem with such strategies is that without the significance and urgency of climate change, actions become a luxury, a ‘nice to do’ rather than a ‘must do’. The literature identifies another form of avoidance in private life: in addition to the overt battles and denial of climate change, there are more subtle forms of “socially organized denial” (Norgaard, 2006), in which people accept the science of climate change but ignore its implications in daily life.

Neither the ‘battle’ nor ‘avoidance’ responses would appear to hold much hope of progressing an effective response to the climate change issue. The third approach described below, of ‘constructive engagement’, means taking account of people’s differing views and seeking to engage them in the climate change issue.

### **1.1.3 The communications and engagement response**

A range of climate change communications and engagement (CCC&E) approaches has been employed to encourage people to take and support more substantial action on the issue. Some of these provide scientific facts about climate change to the general public, for example as done in Australia by the Climate Council whose CEO said that opinions are “useless, what we need are facts” (Lamberts, 2014). The global ‘Climate Reality Project’ and UK’s ‘Carbon Conversations’ are similarly built on a climate literacy model but also utilize group engagement processes that encourage peers to understand and discuss the issue as a catalyst for taking action. Other forums such as the US ‘Public Conversations Project’ intentionally bring together people with a range of views on climate change to find ways of constructively engaging across difference (Regan, 2007). A demographically representative sample of citizens involved in the global ‘World Wide Views on Global Warming’ forum deliberated on climate change views and were able to find some areas of consensus on which to make recommendations to policy makers (Bedsted & Kluver, 2009). In a quite different form of CCC&E, Green Cross Australia’s ‘Witness King Tides’ project invites people to contribute photographs of a king tide at their local beach as a visual representation of projected sea level rise, thus making climate change more tangible, local and personal (Green Cross Australia, 2015).

In short, there are diverse approaches to CCC&E including those that take contrasting approaches for the same general public audience, such as the Climate Council’s science-based

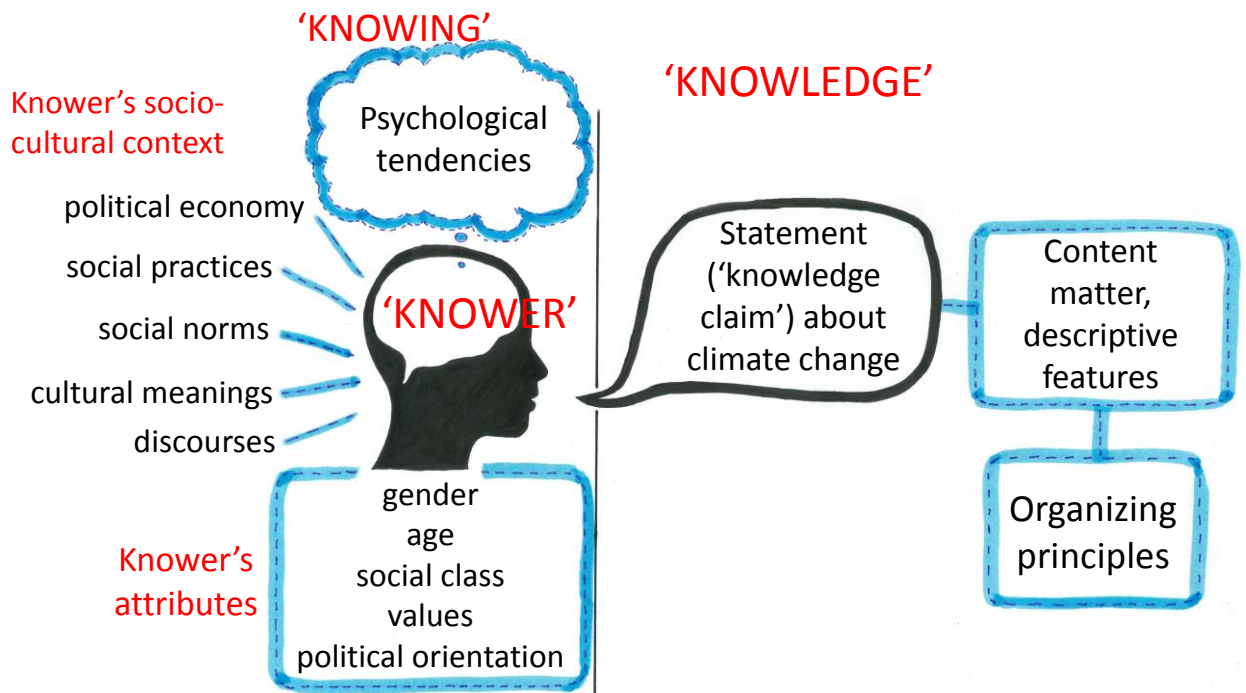
“mythbusting” model versus the government’s science-avoiding “Clean Energy Future” frame. This suggests that the approaches are built upon different assumptions about the workings of CCC&E: about the interaction between the attributes of particular messaging or forms of engagement, and the audience’s attributes such as their preferences, views and ways of knowing. It raises the questions of whether there are systematic ways of tailoring CCC&E to audiences, and of which attributes of the CCC&E and audience need to be matched.

## **1.2 RESEARCH PROBLEM**

The previous section outlined the ‘real world’ problem of climate change and the need to understand and engage with people’s views about it. This section outlines the intellectual or research problem in relation to the existing literature. The approach taken to reviewing the literature was informed by a distinction made clear by Legitimation Code Theory, between ‘knowers’ and their processes of ‘knowing’, and the ‘knowledge’ they produce. These elements and relations among them are depicted in Figure 1.1. On the left hand side, a knower is someone who is immersed in a societal context with cultural discourses and norms that shape the form and content of the statements they make about climate change. The knower’s demographic and psychographic attributes such as their gender, social class, values and so on also influence the form and content of their statements, as do the knower’s processes of knowing, in terms of cognition and emotion. The right hand side of Figure 1.1 depicts ‘knowledge’ itself: a statement or ‘knowledge claim’ made about climate change that is comprised of particular content matter or themes and descriptive features.<sup>1</sup> Finally, the content matter is underpinned by ‘organizing principles’ that are manifested in the content matter being more concrete or abstract, more simple or complex, based on scientific evidence or personal experience, and so on.

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<sup>1</sup> For clarity’s sake and to pre-empt a potential misreading of the terminology, ‘knowledge’ here does not necessarily mean knowledge of climate science, that is, climate literacy. As will become apparent in the following chapters, a statement that “climate change is a hoax, it’s the government’s way of extracting money from us” is just as much a knowledge claim as “climate change is caused by increased concentrations of greenhouse gases”. However the statements differ along theoretical dimensions that are introduced in Chapter 3.



**Figure 1.1: 'Knower', 'knowing' and 'knowledge', in connection with a statement about climate change**

As described in 1.1.2 and explored in more detail in chapter 2, there are two significant bodies of literature that investigate people's views about climate change and engage with the question of why people hold particular views. It is clear that the literature provides a wealth of insights into knowers and knowing, in terms of individuals' cognitive processes, values, attitudes, beliefs, emotions and identities in the psychological literature, and larger-than-individual forces such as cultural norms and the political economy in the sociological literature. These bodies of literature do not also analyze the statements themselves: only at the content or descriptive level of accepting or rejecting climate science, or being pro- or anti- climate action (or somewhere in between), as examples. Some literature that identifies types of climate discourses does thematize or typologize the content matter of statements, but it does not also analyze the underlying organizing principles of those views. Therein lies a paradox: the literature recognizes the need to understand people's views about climate change, but does not study the characteristics of views, beyond content matter descriptions and typologies.

Similarly, the research into the shifts in views that people sometimes make in conversation tends not to analyze the statements (knowledge claims) themselves. Instead the statements become epiphenomena of the social, cultural and political forces that generate them (relations

between knowers). There is also little research into conversants' processes of reaching common ground, and the shifts that might be involved in those processes. Without this understanding of the knowledge claims themselves, we cannot assess whether the obvious content matter changes, for example in shifting from rejecting to supporting various climate change solutions, are accompanied by changes in organizing principles. Understanding shifting views in these ways is important because it opens up possibilities for CCC&E to facilitate people's shifts from rejecting to accepting climate change and adequate responses to it.

In conclusion, the literature features very little analysis of knowledge itself, in this case, people's statements of view about climate change, as shown on the right hand side of Figure 1.1. Commenting on the field of education, Bernstein (1990, p. 166) wrote that knowledge had been treated as if it were "no more than a relay for power relations external to itself: a relay whose form has no consequences for what is relayed". The present study analyzes knowledge claims in their own right (Figure 1.1 right side) rather than only as a relay for power relations (left side). It investigates whether the form or internal structure (organizing principles) of knowledge claims about climate change – whether they are concrete or abstract and so on – does in fact have consequences for what is relayed and whether the knowledge claims are accessible to and accepted by particular audiences.

### **1.3 RESEARCH PURPOSE AND QUESTIONS**

Given the IPCC's two degree guardrail, the present study takes as its starting point a normative goal of *more people taking more substantial action on climate change*. It also starts from the viewpoint that understanding people's views is a crucial first step in developing effective CCC&E to engage people in the issue. The specific aims of this research are to understand people's views about climate change and how they change (shift) and might be subject to change, for example through CCC&E. These aims serve a broader purpose of creating a more constructive public debate on climate change. In turn, this is conceived as a step towards the goal of getting more people taking more substantial action on climate change.

To these ends, three research questions were formulated to guide the research:

1. What views do people have about climate change, and on what basis do statements of view differ?



2. What shifts in views do people make and what areas of common ground do they find in conversation? On what basis are shifts and finding common ground made?
3. How can the insights into views and shifts be used to inform the development of effective climate change communications and engagement initiatives for different groups of people?

In more detail, research question 1 sought to identify the organizing principles of participants' knowledge claims (statements of view), towards the larger research aim of explaining the basis for differences among participants in the climate change debate. Research question 2 was concerned with identifying participants' processes of negotiating their climate change positions, including examples of coming to common ground, to understand both the dynamics of the climate change debate as well as the ways in which the differences can be articulated and how they might be transcended. Research question 3 sought to bring together the organizing principles identified through addressing research questions 1 and 2, with the principles and strategies identified in the CCC&E literature, to provide a systematic way of tailoring communications and engagements to audiences' ways of knowing about climate change.

#### **1.4 SCOPE OF THE STUDY**

The thesis builds upon a rich body of literature and practice that seeks to understand climate change discourses and contribute to effective communication and engagement. The study adopts Legitimation Code Theory (LCT) as a theoretical framework that allows one to analyze people's statements about climate change (knowledge claims, on the right hand side of Figure 1.1), which have properties and powers of their own. The study builds on the strengths of existing CCC&E guidance to provide (more) systemic guidance for CCC&E based on first principles. For example, existing audience segmentation, 'translation' and 'transformation' approaches are reconceptualized in terms of the match or clash between the organizing principles of climate change statements and the audience's propensity and ability to understand, accept and align themselves with such statements.

In these ways, the study focuses on analyzing knowledge itself: the properties of people's statements about climate change, shown on the right hand side of Figure 1.1. This complements studies into what might be thought of as 'causes' of or influences on people's

statements, shown on the left side of Figure 1.1, such as the efforts of vested interests to influence climate change discourse and the socio-political changes that shape longer term shifts in public opinion. These are areas the study barely touches on. The literature review in Chapter 2 briefly outlines existing work in these areas. It also references other scholars' investigations into the influence of 'ideology', in its myriad meanings, on the formation of climate change views (e.g. McCright & Dunlap, 2011; McKewon, 2012). The term 'ideology' is replicated in the thesis when it is used by think tankers or other scholars, but this is not a study of ideology.

The study gives only a brief nod to the forces of power and influence that would need to change in order to shift people's views about climate change, let alone the societal, psychological and physical barriers to action. These are acknowledged but not investigated in the study. Nonetheless, even in these domains, the organizing principles or in Bernstein's term, form, of statements about climate change are likely to impact the accessibility, acceptability and thereby power and influence of such ideas over different audiences. In revealing the characteristics of these knowledge claims, the study offers something that contributes to and complements existing work in these areas. It is clear that understanding the properties and powers of different statements about climate change is a gap in the literature and a contribution that could be made by employing LCT in the present study.

## **1.5 STRUCTURE OF THE THESIS**

This chapter has provided an overview of the study. It identified a wealth of existing research into the psychological and sociological factors relating to 'knowers' and 'knowing' that *shape* views about climate change, and a lack of research into the statements of view or 'knowledge claims' themselves. The chapter then outlined the purpose of the study and its three research questions that concern:

- climate change views;
- shifts in views and areas of common ground; and
- communications and engagement responses.

The remainder of the thesis consists of a further eight chapters. In Chapter 2, the literature pertaining to each research question is reviewed. The review identifies the strengths and contributions as well as the limitations of each body of literature. In essence it establishes the

task for the present study. Chapter 3 outlines how this task is carried out. It introduces the theoretical framework adopted for the study and the methodology involving a qualitative case study with two cases. It also describes the approach to data collection and analysis. The results of the analysis are presented in chapters 4, 5 and 6. Chapter 4 reports on the findings of the first case (a Rotary club) and chapters 5 and 6 on the second (think tanks). Chapter 7 brings together these analyses and discusses their implications for CCC&E. It also reconceptualizes CCC&E principles and strategies in terms of their organizing principles, thereby establishing the foundation for making CCC&E recommendations for lay audiences and public policy influencers in chapter 8. The final chapter (9) concludes the study with a discussion of its principal findings, contribution to knowledge, limitations and potential areas for further research.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 INTRODUCTION**

As briefly outlined in chapter 1, this study is interested in people's views about climate change, how they shift in conversation, and how they might be subject to change through climate change communications and engagement (CCC&E). Chapter 1 introduced the research by establishing the problem motivating the research and the objectives and research questions of the study. The purpose of this chapter is to identify the contributions of different areas of literature in understanding and addressing the research questions, as well as their limitations; that is, what else is needed in order to address the research questions. The chapter identifies theoretical implications of the literature for the research design, in terms of the task for the present research and choice of a research framework that can meet the requirements of this task. It also discusses methodological implications for the design of the engagement events, which are the primary source of empirical data for the study. In these ways the chapter establishes the foundations for chapter 3 (methodology).

The chapter begins by elaborating the approach to the literature review that was briefly introduced in section 1.2). The review itself is structured by the three research questions:

1. Section 2.3 concerns people's views about climate change and the explanations offered in the literature for differing views.
2. Section 2.4 describes the much smaller body of literature that is relevant to the second question of the basis for shifting views and finding common ground.
3. The review then turns attention towards the third question, investigating the way that scholars have developed principles and made recommendations for CCC&E practice (2.5).

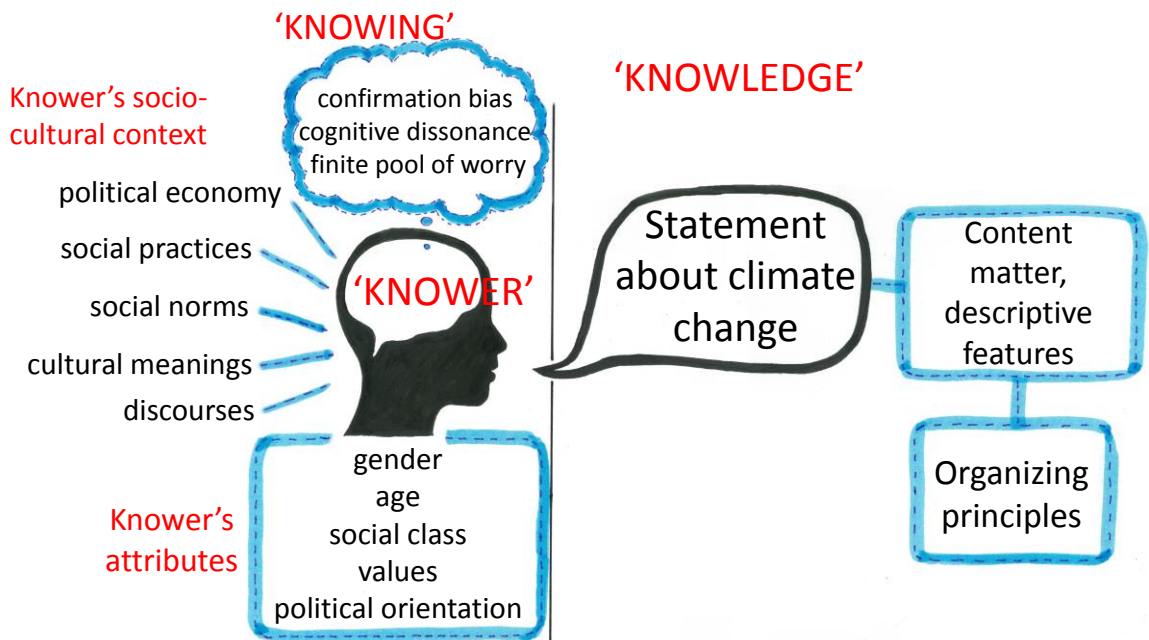
The conclusion (2.6) summarizes lessons learnt from the literature and considers their implications for the present study.

### **2.2 APPROACH TO THE LITERATURE REVIEW**

Before embarking on the literature review, this section describes the approach that informed the investigation. It further illustrates the distinction between knowers, knowing and

knowledge that was introduced in section 1.2. These concepts serve as a useful heuristic device for conceptualizing the literature, ahead of introducing the study’s theoretical framework in chapter 3.

In this study, people’s statements of view are considered as ‘knowledge claims’ that have their own properties and powers. As shown in Figure 1.1 and reproduced below for ease of referencing, the social context shared by knowers are things that *shape* the form and content of the statements, such as the cultural norms that prescribe what is acceptable in talk about climate change, and existing cultural meanings of climate. In a similar way, the attributes of knowers and their thought processes (‘knowing’) – their social class, gender, values, attitudes, beliefs, emotions and so on – are not features of the knowledge itself but of knowers.



**Figure 2.1: ‘Knewer’, ‘knowing’ and ‘knowledge’, in connection with a statement about climate change.**

A personal, non-theoretical example might help to illustrate the distinction between ‘knowers’ and ‘knowing’ on the left side of Figure 2.1 and ‘knowledge’ on the right. In terms of the knower’s attributes and social context, I am a university-educated, scientifically literate woman who lives in a Western, capitalist democracy. Below are three statements or ‘knowledge claims’ I have made that generally relate to choice of transport options and the contribution of transport to climate change:

1. To my six year old son: “We catch the train because it’s cleaner. Cars make the air dirty and that’s bad for us and bad for the animals.”
2. As co-author of the European Environment Agency Trends and Projections report: “Greenhouse gas emissions from the transport sector continue to grow steadily”, largely due to “high growth in both passenger transport and freight transport by road” (2008).
3. To my friend who is skeptical about climate change: “I love catching the train, it’s so much more relaxing than driving.”

The statements are clearly quite different in several respects. The differences include their content matter, degree of complexity, judgment of ‘good’ and ‘bad’ – in other words, the properties of the ‘knowledge’, the statements themselves, differ. However, my attributes and the societal milieu and socialization processes that have shaped them, relating to the ‘knower’, have not changed from one statement to the next. This demonstrates that statements can *vary independently* of my attributes: I can choose to make statements that have greater or lesser explanatory power, are infused with more or less axiological judgment, are more abstract or concrete, more complex or simple, and so on. The characteristics of knowers and knowing on the one hand, and of knowledge on the other, are two related but separate things.

Secondly, as ‘knowledge claims’, statements have *properties and powers* of their own that are irreducible to those of knowers (Maton, 2014). The properties and powers become apparent if we switch around the statements:

1. My son would be thoroughly mystified by the emissions statement.
2. My skeptical friend would comprehend the emissions statement but would be averse to being lectured about emissions when he does not believe that climate change is a problem in the first place.
3. Writing about my subjective experiences of train travel in the EEA report would come across as an error or a glitch, out of place amongst quantified and technical descriptions of emission sources.

Thus, the characteristics of the statements, such as their level of complexity, enable differing levels of accessibility to audiences to make sense of the content matter. Other features, such as expressions of ethics or normative goals, enable differing capacities to secure alignment or

agreement of audiences that have opposing views to those of the claim maker. The characteristics of statements also confer greater or lesser explanatory power toward the world that they describe. In sum, these characteristics or *organizing principles* of the statements give one statement certain properties and powers and another statement others, and are thus deserving of analysis in their own right.

### **2.3 VIEWS ABOUT CLIMATE CHANGE**

There is a large and growing body of literature across several fields that explores people's views about climate change and the processes and factors that influence them. This section investigates to what extent the literature not only describes the 'surface features' such as the content matter of statements about climate change, but also gets 'below the surface' to identify their underlying forms or *organizing principles*. It also explores the explanations for particular views that are offered in the literature that center on what it is about individuals or their groups, culture or society that influences and shapes their views.

The following subsections are structured according to two broad approaches that scholars tend to adopt in investigating people's views about climate change. One is grounded in or influenced by psychological approaches and considers views as reflecting individual choices and coping mechanisms in response to individual cognition of the issue, as well as emotional reactions, pre-existing beliefs, attitudes, desires and behaviors, and personal attributes related to self-identity (2.3.1). The other is predominantly sociological in orientation, complemented by fields such as anthropology, history and political science, and considers climate change views as the product of larger social systems and historical contexts (2.3.2). The distinction is not always clear cut; for example social psychology draws on elements of both psychology and sociology. While the present study is predominantly grounded in sociology, this review covers the extensive psychological literature that seeks to explain differing views about climate change, because it is the dominant approach on the topic and it has shaped the kinds of CCC&E practices adopted in this study (described in 2.5 and chapter 3).

Some key points about the strengths and limitations of each body of work within the psychological and sociological literatures are noted throughout the two subsections. The discussion (2.3.3) returns to the strengths and limitations and elaborates on their implications for the study.

### **2.3.1 The psychological literature**

Psychological approaches propose that people's views about climate change reflect human cognitive processes that are said to operate relatively universally, for example the ways that humans tend to process information about threats, as well as individual attributes such as existing values, beliefs and worldviews that differ amongst people. Views are the product of interactions between the climate change concept with all its challenging implications, and people's emotions, values, beliefs, worldview and identity, and the degree to which these two sets of interacting things are congruent or can be reconciled.

In order to ascertain people's views about climate change, the psychological research typically makes use of quantitative surveys with preset questions and multiple choice answers about respondents' views. Across Europe, the US and Australia, many survey respondents agree with statements that climate change is uncertain, distant in time and space and personally distant rather than personally relevant, for example affecting polar bears rather than family members (Leiserowitz, 2006; Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007). A strength of quantitative surveys is their ability to measure a large number of indicators of people's views about climate change, such as whether or not climate change exists, the extent to which it is human-induced, problematic, happening now or in the future, and affecting respondents personally or distant others. Large numbers of people can be surveyed and their responses compared over time by repeating surveys, allowing identification of trends. However, because the questions and answers are framed in the researchers' terms, they may not adequately reflect respondents' meanings in relation to climate change and it is not possible to investigate the nature of those meanings as expressed by respondents.

As part of the explanation for why people state (or agree with survey statements) that climate change is abstract, complex and distant, psychological studies have identified several characteristics of climate change itself that make it difficult to comprehend and accept. Unlike many other environmental issues, climate change is a complex, abstract idea that is intangible, invisible and personally distant; it can only be indirectly experienced through its manifestations in extreme weather events and seasonal changes (Poortinga et al., 2011). On the other side of the equation, a number of features of human cognition and emotion, that is, 'knowing', are said to hinder acceptance of concepts such as climate change that are conceptually and emotionally challenging. Climate change views, and in particular denial, have been



conceptualized as the product of phenomena such as: the *confirmation bias*, the tendency to interpret new information in ways that are consistent with and do not require changes to existing attitudes, worldviews, beliefs and behaviors (Whitmarsh, 2011); *cognitive dissonance*, the mental conflict that people experience when they are presented with evidence that is incompatible with existing beliefs (Center for Research on Environmental Decisions, 2009); *emotional numbing* (CRED, 2009) which results from repeated exposure to troubling construals of climate change such as the iconic image of a lone polar bear drifting on an ice floe (O'Neill & Nicholson-Cole, 2009); and the *finite pool of worry*, the limited capacity to worry about multiple issues and the tendency to 'switch off' one issue when others seem more pressing (Whitmarsh, 2011). For example, in the US, Kahn and Kotchen (2010) found that levels of concern and action on environmental issues waned in periods of recession and high unemployment.

The literature that deals with the relationship between climate change and people's cognitive and emotional responses to it is particularly useful in articulating why climate change is such a challenging issue, and the responses that it is likely to evoke. The literature suggests that these cognitive and emotional responses apply relatively universally, whereas it is clear that not everyone reacts to the idea of climate change in the same way. Some people *do* resolve cognitive dissonance by changing their views and behaviors to fit newfound knowledge about climate change rather than rejecting climate change to maintain existing views and behaviors, do maintain concern, and do act (Gaillard, 2012; Kent, 2012). The existing psychological approaches do not have a mechanism for explaining these differences beyond correlating them with individual attributes such as valuing nature or having a particular political orientation (discussed below). The strength of the approach in identifying emotional and thought processes ('knowing') is also its weakness, in that examination of the statements that people make ('knowledge') remains at the descriptive level. The properties and powers of the statements themselves remain unexamined: they become reflections of processes in people's minds ('knowing').

In terms of how people understand and form views about climate change the psychological literature presents contrasting conclusions about the importance of climate literacy (understanding the science and its implications). While some scholars suggest that securing more action on climate change is unlikely unless people come to grasp the significance and urgency of the problem (Moser, 2010), some Australian empirical evidence suggests that

science-based knowledge about anthropogenic climate change is not a prerequisite for being concerned about it or taking action (Rogers, Curtis, & Mazur, 2012). In fact, being more informed about climate change may undermine one's perceptions of personal or collective efficacy to deal with the problem. One US study found that people tend to stop paying attention to climate change when they realize that there is no easy solution for it (Krosnick, Holbrook, Lowe, & Visser, 2006), and another found that more informed respondents report lower levels of personal efficacy, concern and personal responsibility for climate change (Kellstedt, Zahran, & Vedlitz, 2008).

Rather than the scientific information solely determining views about climate change, people also tend to rely on the views of trusted sources and their own lived experience of weather events. The views of 'people like me' (Moser, 2010) and other members of one's cultural community such as media or political opinion leaders are highly influential (Hoffman, 2011b; Kahan, Jenkins-Smith, & Braman, 2011). Lived experience of recent extreme weather events such as floods and hurricanes has been associated with heightened concern about climate change (Olausson, 2011; Spence, Poortinga, Butler, & Pidgeon, 2011; Vraga, 2007). In addition, people employ a number of strategies to make sense of the complex and abstract concepts of climate science. In the parlance of a social psychological theory (Social Representations theory), these strategies include "anchoring" (relating an unfamiliar concept to existing familiar concepts) and "objectification" (translating the abstract into the concrete) (Olausson, 2011; Smith & Joffe, 2012; Wibeck, 2014b). As an example, the oft-cited tendency for lay people to conflate climate change and weather reflects their anchoring of an "abstract and intangible risk" in something "familiar and comprehensible" (Olausson, 2011, p. 289).

These empirical studies demonstrate that climate literacy is but one of several ways in which people understand climate change. The studies usefully demonstrate that people are not purely rational meaning-makers; their opinions about climate change are mediated by perceptions of agency or self-efficacy, by the views of trusted sources, their own lived experience, and the stock of familiar, concrete concepts to which they can relate unfamiliar, abstract concepts such as climate change. This raises the question as to whether there are systematic ways of characterizing climate science and climate literacy on the one hand, and emotions, personal agency, trusted sources and lived experience on the other. Or similarly, "abstract and intangible risk", and things that are "concrete" and "familiar" (Olausson, 2011).

A limitation of these studies for understanding views about climate change is that they consider views as the product of people's thought processes ('knowing'), rather than also examining the statements as knowledge claims, that is, the characteristics of the claims themselves ('knowledge').

Some literature does examine people's stated views about climate change ('knowledge') in more detail and characterizes views on some descriptive basis into "types" or "frames". For example, based on survey questionnaire responses, Maibach et al (2011) developed a typology of six "interpretive communities" in the US along a continuum from those who accept climate change and are actively engaged in taking action (the Alarmed) to those who deny its reality and actively oppose societal action (the Dismissive), with Concerned, Cautious and Disengaged in between. These six types form the basis of similar typologies used in other countries (e.g. Morrison, Duncan & Parton (2013) in Australia). In other studies, different groups of people have been found to use different "frames" or ways of expressing climate change. To give two examples, the term "climate change" was found to be commonly used by rural Australians who accept climate change and "weather variability" by those who do not (Buys, Miller, & van Megen, 2012). Hoffman (2011a) identified several "cultural themes" in statements commonly made by skeptics, such as that climate science and policy responses are covert ways for environmentalists and the government to interfere in the market and curb individuals' freedom.

Several of the typologies have been used as the foundation for exploring and explaining how people's *attributes* are correlated with, or co-occur with, one or more types of skepticism. As examples, Poortinga et al (2011) correlated Rahmstorf's (2004) typology of trend, attribution and impact skeptics with survey respondents' attributes such as their stated values and socio-demographic factors. Based on the results they developed "a sociodemographic and 'ideological' profile of individuals who express climate skeptical views", concluding that "climate skepticism is rooted in people's core values and worldviews". Leviston and Walker (2012) correlated the Rahmstorf types with attributes to demonstrate that "beliefs are significantly related to levels of proenvironmental behavior, political orientation, locus of responsibility, cognitive evaluations, affective responses, and perceived moral duty to act." The six Alarmed to Dismissive types (Maibach et al, 2011) have been correlated with audience attributes such as age, gender, ethnicity, level of education and values to provide a detailed

profile of each group. Each type was also correlated with Grid Group Cultural Theory (GGCT) worldviews (egalitarian, hierarchist, individualist, fatalist) following Leiserowitz's (2006) survey findings that acceptance of climate change risks and support for climate policies was strongly associated with egalitarian views, while opposition was associated with individualist and hierarchist views. These studies imply a causative relationship between the audience's attributes and their views about climate change ("underlying values and worldviews *strongly condition* the way many members of the American public currently think about this risk": Leiserowitz, 2006, p. 63, emphasis added).

As a strength of this approach, producing profiles based on a typology provides an efficient way of identifying audience types or segments that are likely to hold particular views about climate change and to respond in certain ways to particular messaging about it. Hence, such an approach can be used to segment audiences for communications and engagement (see 2.5). However, typologies are static measures that homogenize everything within each type and cannot capture processes of change within or between types. This is because the types and frames are based on the content matter and descriptive features of knowledge claims as shown in Figure 2.1, such as whether or not climate change exists or is problematic, or the preferred technological/social/other approach to solutions. For example, all three of my statements in section 1.2 could be categorized as 'supports modal shift from car to public transport', thereby homogenizing the statements within one type and losing the ability to see their organizing principles (e.g. greater or lesser abstraction of meaning) and the properties and powers they confer. The content matter can be endlessly demarcated and described but not explained, without also examining the characteristics of the statements themselves ('knowledge') and their properties and powers. Further, assigning one Rahmstorf type per survey respondent (e.g. Leviston & Walker, 2012) does not take account of the potentially dynamic or shifting nature of people's views about climate change (see 2.4).

Other studies have correlated particular views about climate change with individual attributes without necessarily using typologies. As examples, concern about climate change and support for responses to it have been correlated with an ethos of living in harmony with nature (Rogers et al, 2012), the emotions of worry, interest and hope (Smith & Leiserowitz, 2014), a perception of self-efficacy, which appears to mediate feelings of fear that otherwise tend to lead to rejection of climate change (O'Neill & Nicholson-Cole, 2009; Krosnick et al, 2006), higher levels

of educational attainment (Reser, Bradley, Glendon, Ellul, & Callaghan, 2012), and in some but not all surveys, with being younger, female and of higher socio-economic status (Leviston & Walker, 2012; Reser et al, 2012). Conversely, doubts about personal and societal agency to address climate change, so-called “response skepticism” (Capstick & Pidgeon, 2014), are correlated with a lack of concern or even fatalism about climate change. Particularly in the US and Australia, people’s political affiliation appears to have a strong bearing on their views about climate change. Australian surveys consistently demonstrate that Labor and Green voters are more accepting of climate change and supportive of substantial responses to it than are their conservative Liberal and National counterparts<sup>2</sup>(Leviston & Walker, 2012; Morrison, Duncan, Sherley, & Parton, 2013). Feygina, Jost and Goldsmith (2010) suggest that conservatives’ tendency to reject climate change or downplay its seriousness stems from their belief that the proposed responses threaten existing political and economic systems.

These approaches are useful in showing that emotions, attitudes, values and political orientation play an important role in shaping people’s views about climate change. They also usefully show the interior differences between different groups of people. However, the characteristics of views (knowledge) become reduced to the individual or group attributes of knowers such as “woman”, “young”, “Labor”, “an ethos of living in harmony with nature” and so on. Analyzing the characteristics or organizing principles of knowledge claims would provide further and complementary insights into climate change views (knowledge).

### **2.3.2 The sociological literature**

The sociological approaches described in the literature consider the ways in which people’s views about climate change reflect broader societal trends and practices. By shaping and constraining the “social imaginary” (Castoriadis, 1987), forces such as societal trends towards greater valorization of subjective experience and knowledge, the political economy, and cultural norms and practices are all shown to shape the way individual people think about and talk about climate change. The following examples demonstrate the variety of ways in which views about climate change have been considered as the product of such forces or influences that operate at smaller or larger scale.

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<sup>2</sup> To provide some context for international readers: there are four major political parties in Australia: Labor is a centre-left party with strong ties to trade unions; the Liberal Party comprises a mix of conservatives and neo-liberals who are generally pro-business and small government; the Nationals traditionally represent rural and regional Australia and are in coalition with the Liberals; the Greens focus on the environment and ‘progressive’ social policies.

At the macro level, people's views have been conceptualized as the product of societal shifts away from the centrality of science towards a postmodern relativization of truth and greater valorization of individual, subjective experience and knowledges (Hulme, 2009; Jasanoff, 2010). Employing comparative narrative analysis at the micro level, Lejano et al. (2013) highlight the differences between scientific (IPCC) discourses of degrees of warming and predictions out to 2100 with lay accounts of weather patterns remembered from childhood. They suggest that lay people disengage from the objective, impersonal, third person IPCC discourses that entail "a running list of truth claims" because these discourses do not match their own ways of expressing climate change in first person narratives of subjective experiences and resolution of problems. These studies usefully identify and thematize some fundamental differences between scientific and lay discourses about climate change, based on the features of 'objective' knowledge (about science, truth claims, degrees warming) and 'subjective' knowledges (subjective experience, personal narratives). However, they remain at the descriptive level, analyzing content matter (e.g. about scientific claims or personal experiences). The organizing principles that underpin such statements (knowledge) remain unanalyzed.

Other sociological literature makes links between skepticism or denial of climate change, the political economy and the influence of "anti-reflexive" forces: vested interests that seek to "blunt the potentially transformative effects of the climate change problem" towards new political and economic systems (Young & Coutinho, 2013). In Australia, policy interventions aimed at stalling climate action as well as public climate denial campaigns have been sponsored by vested interests such as fossil fuel industries and neoliberal think tanks (Hamilton, 2010; McKewon, 2012). McCright and Dunlap (2011) describe how climate change has been drawn into the "culture wars" in which contentious issues are fought on political and ideological (rather than epistemic) grounds. In this light, they situate contrarian views on climate change within broader conservative endeavors to protect the "simple modernization" of industrial capitalism. Empirical studies in several countries have investigated the agenda-setting role of the media, demonstrating that news media framing of the climate change issue strongly influences how the public understands and interprets it (Boykoff & Roberts, 2007; Carvalho, 2007; Corbett & Durfee, 2004; Olausson, 2011). Climate skepticism or denial has been linked with increasingly corporatized media ownership typically associated with a silencing or

downplaying of the climate change issue (Bacon, 2013; Dispensa & Brulle, 2003). The value of this literature lies in exposing the power of vested interests and their influence on others' views about climate change. However, climate change statements or 'knowledge claims' become epiphenomena of 'knowers': power relations, the culture wars and campaigns run by vested interests. The nature and form of the knowledge claims themselves remain unanalyzed.

The literature also delves into more subtle forms of denial, involving not outright rejection of anthropogenic climate change but its invisibilization in daily life resulting in a lack of action. Sociological studies variously describe this phenomenon as the product of "sociological ambivalence", "two-track thinking", and "socially organized denial", as outlined in the following examples. Several empirical studies have found that when people describe the concept of climate change in a scientific sense, it tends to be construed as a serious problem, but it becomes invisible when they describe their daily lives; it is not described as something that they should act upon. Carolan (2010) interprets this pattern in terms of "sociological ambivalence" (Merton, 1976), where ambivalence takes the meaning of its Latin roots, "ambi" (both) and "valentia" (strength), rather than the popular usage implying indifference. Carolan suggests that ambivalence is due in part to the contradictions inherent in the roles of wearing one 'hat' as an environmentalist and another as the family breadwinner (for example). Several interviewees described being "pulled in various directions" due to perceived social expectations to be concerned and do something about climate change while the political and economic systems in which they were embedded were compelling them not to. Thus, ambivalent views about climate change are understood to be "an unavoidable condition of being a social actor" within the system (Carolan, 2010, p. 320).

Similarly, Leahy et al. (2010) and Threadgold (2012) describe a phenomenon of "two-track thinking", referring to the disconnect between "interviewees' apocalyptic visions of future as far as climate change is concerned but simultaneous positive visions of their own futures that are untouched by climate change" (Threadgold, 2012). Threadgold (2012, p. 17) argues that the experts in young people's lives, namely parents, teachers, politicians and media, "discursively create a hierarchy of risk that legitimises individual choices about managing one's own life trajectory while delegitimizing action towards large scale social issues." Leahy et al (2010, p. 864) conceptualize the positive personal future track as "the social imaginary of capitalism as it normalises daily life decisions": the need to have a job, work hard, be rewarded,

and vote accordingly, with any radical change to the economic system outside the social imaginary and therefore inconceivable and impossible.

Norgaard (2006; 2011) describes a phenomenon similar to “sociological ambivalence” and “two-track thinking” that reflects the political economy and cultural norms around conversation, emotion and identity. In her conceptualization of “socially organized denial”, people tend to maintain a “double reality” of being knowledgeable and concerned about climate change and yet making it invisible in political, social and private life. This active ignoring of climate change is socially organized in the sense that it is carried out through conversations that are governed by emotional and conversational norms about what is acceptable to say in different contexts. These include staying in control emotionally, not mentioning climate change in social situations where it would be a ‘downer’, and not focusing too far ahead in time or space. Norgaard postulates that people avoid dealing with the disturbing reality of climate change in order to avoid emotions of fear, guilt and helplessness, to follow cultural norms, and to maintain positive conceptions of individual and national identity. In turn, national identity may be linked to economic self interest; Norway, like Australia, is heavily reliant on fossil fuels to power the economy and benefits financially from the export of fossil fuels. In these ways, climate denial is embedded within and reflective of both cultural norms and the political economy.

The concepts of “sociological ambivalence”, “two-track thinking” and “socially organized denial” are useful for explaining the mechanisms by which people who are climate literate – aware of the science and its implications – nonetheless ignore climate change in their daily lives. Norgaard and others demonstrate the ways in which cognitive dissonance and other individual thought processes may be products of larger conflicts, such as between a political economy built on oil and a national identity of being fair and humanitarian-minded. Thus, these studies usefully integrate the forces of influence across micro and macro scales and show how they interact. Their limitation for addressing a research question about understanding views about climate change is that views are analyzed only as products or reflections of these forces relating to knowers. The knowledge claims themselves remain unanalyzed beyond the content matter pattern of acknowledging climate change on the one hand and making it invisible on the other.



At the micro level, other studies investigate the influence of socio-cultural meanings and practices relating to nature and weather. In an Australian study, many interviewees construed observed weather changes as products of natural cycles (Connor & Higginbotham, 2013). In a separate study, interviewees accepted heat as being part of the Australian way of life and a relatively benign annoyance rather than a serious health risk (Banwell, Dixon, Bambrick, Edwards, & Kjellström, 2012). Connor and Higginbotham (2013) portray the 'natural cycles' explanation for observed weather changes as a "significant cultural construct" relating to experiences of the vicissitudes of the Australian climate, cultural practices of monitoring seasons and weather, and shared understandings of the primacy of local experience over regional and global climate modelling. The authors contrast this interpretation with the psychological one of 'natural cycles' as a fear management response or protection against moral anxiety. Banwell et al. (2012) identify Australians' cultural acceptance of heat as being "sedimented within the national psyche", with heat seen as being "integral to the habitus". In this model, climate change is interpreted and normalized within existing cultural constructs and practices.

These studies have value in demonstrating the ways in which people bring to the climate change issue existing socio-cultural meanings of climate, nature and heat, and practices of monitoring seasons and weather. Culture matters, as does context: there are aspects of 'being Australian' that are likely to shape people's views about climate change and their perceptions of appropriate responses. Also, these studies point to the possibility that for at least some people, their views reflect their own experiences of weather more so than scientific information. Again, as for the other sociological literature on climate change views, a limitation of these studies is that people's statements are analyzed only as products or reflections of the socio-cultural meanings and practices of 'knowers'. Beyond the content matter about climate, weather, nature and heat, the characteristics of the knowledge claims (statements) themselves are not analyzed.

Finally, several typologies of climate change discourse have been articulated in the sociological and related literature. These include Szerszynski and Urry's (2010) skepticism, gradualism and catastrophism, Bäckstrand and Lövbrand's (2007) green governmentality, ecological modernization and civic environmentalism, Dryzek's (2005) problem solving, sustainability, survivalism, green radicalism and promethean discourses, and Hulme's (2009) Eden, which

communicates a desire to return to a simpler era, Babel, where climate becomes an object of human mastery and control, Apocalypse, about worry and concern for the future, and Jubilee, concerning social and environmental justice. Here, statements of view are usefully studied in their own right to identify and group together descriptive themes. They represent the first steps towards analyzing the organizing principles or structure of 'knowledge' itself. However, despite the different disciplinary approach, these typologies share the same strengths and weaknesses as those utilized in psychological studies. Views are analyzed only on the basis of content matter relating to the topic of climate change – in other words, surface features that can be endlessly demarcated and described but not explained, rather than the organizing principles underpinning those surface features.

### **2.3.3 Discussion**

This section has identified a number of strengths and limitations of the psychological and sociological literatures in understanding people's views about climate change and why those views differ.

In summary, the strengths of the psychological literature include its findings about the influence of people's existing beliefs, attitudes, values and identities on their views about climate change. It identifies factors that make the concept of climate change challenging to comprehend, in that it is complex, abstract, intangible, invisible and personally distant. The literature also usefully articulates the types of emotional responses and thought processes that climate change typically evokes. In the context of the present study's research questions, a limitation of the psychological literature is that statements of view tend to be correlated with a potentially endless number of descriptors of knowers' personal attributes such as "woman", "young", and so on, or alternatively, reduced to reflections of cognitive and emotional responses (knowing). In an example of the latter, climate change statements become characterized according to the effect they produce in people's emotions or thoughts, such as being 'fear-inducing' or not (O'Neill & Hulme, 2009). In reducing statements of view (knowledge) to psychological factors (knowing), the characteristics of the statements themselves become hidden. Understanding people's views and the basis on which they differ would be enriched by analyzing both sides of Figure 2.1: 'knowers' and their 'knowing' as well as the nature and structure of the claims themselves ('knowledge'), which, as shown in the personal example on pages 11-13, have properties and powers of their own.

The sociological literature considers climate change views as products of power relations, the political economy, social statuses, cultural and emotional norms, and socio-cultural practices. It exposes the role of climate denial campaigns in fostering denial in public opinion. In relation to more subtle forms of denial, it details the mechanisms by which climate literate people nonetheless ignore climate change in their daily lives. It recognizes psychological concepts such as cognitive dissonance as reflections of larger forces. As Carolan (2010) puts it, the power of sociological approaches lies in their ability to show how phenomena that at first glance might appear to solely reflect individual choices and thought processes are also reflections or expressions of social, cultural, political and economic systems. At the micro level, other approaches provide useful first steps in thematizing the differences between scientific and lay discourses, and in revealing the influence of socio-cultural meanings and practices on people's climate change views.

In terms of limitations, the sociological literature on overt climate denial tends to consider statements only as reflections of power relations and vested interests, for example in attributing skepticism or denial to corporatized control of the media. Beyond descriptions of content matter about scientific uncertainty and the like, media and lay people's ways of representing climate change and the underlying structure of those representations have not been analyzed. These studies focus on *whose* knowledge and *processes* of how it is produced, transferred to lay audiences and accepted (or not), rather than also on *what* knowledge. Clearly, analyzing both of these complementary elements, both sides of Figure 2.1, would contribute to a richer understanding of the whole picture.

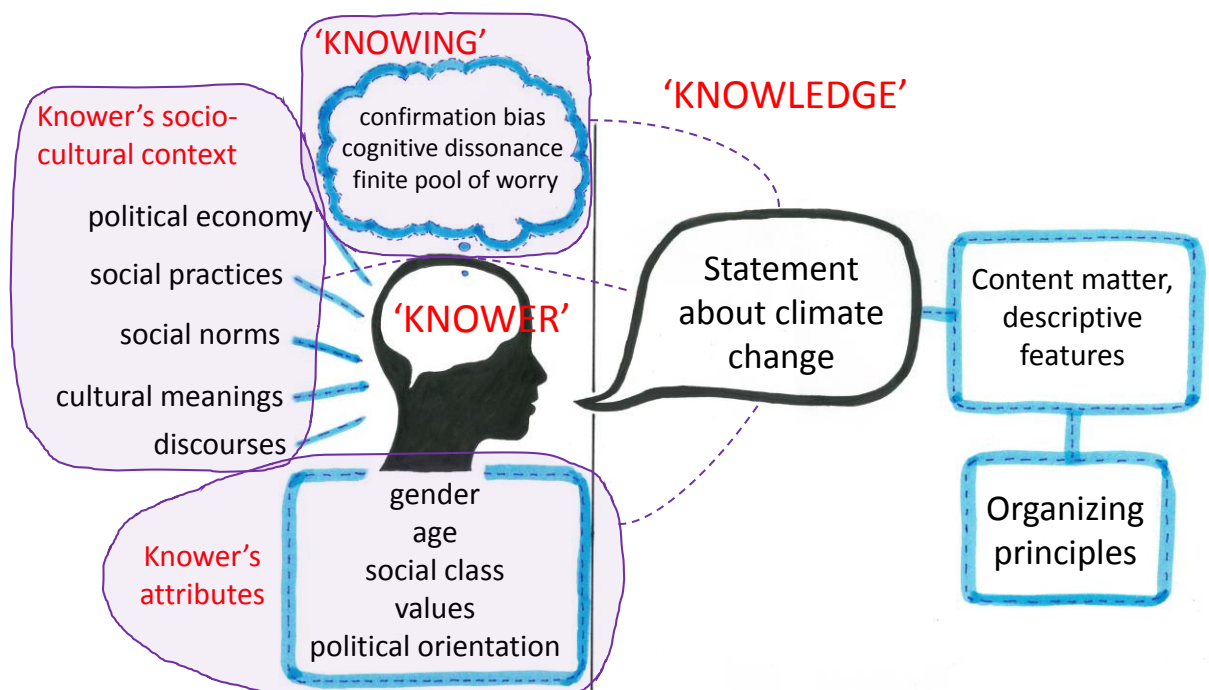
Similarly, a content matter pattern is identified of people being knowledgeable about climate change but failing to integrate its implications within their descriptions of daily life. However, the nature of statements themselves is not characterized, only the processes that lead to them. The statements become largely inconsequential as they are condensed within the concepts of "sociological ambivalence", "socially organized denial" and "two-track thinking". These thought processes relate to cognitive dissonance which in turn is shown to be influenced by larger sociological forces. Thus, the statements that people make about climate change are considered only as products of the political economy, social norms, thought processes and the like, rather than (also) being 'seen' and analyzed as knowledge claims with properties of their own.

An extension of the knowledge claims remaining unanalyzed is that the sociological literature on climate change views lacks a means of identifying and explaining *differences* in views. Typically, within a given society (“risk society”) or a given national or sub-national culture (Norway, Australia), the sociological phenomena under investigation are implied to act fairly universally. All citizens of a nation are basically subject to the same political economy and influence-shaping efforts of vested interests. At a smaller scale, everyone participates in socially organized denial and ambivalence to some extent in order to participate in the rituals of daily life (Norgaard, 2011; Carolan, 2010). It would also be useful to investigate the differences in people’s views, particularly in Australia where (unlike in Norway) sizeable segments of the population say that they reject the existence of anthropogenic climate change (Leviston & Walker, 2012), as distinct from the more subtle denial of accepting but actively ignoring and failing to take significant action. Conversely, as noted earlier, some people do accept climate change and its implications for personal and political action. If the statements of view themselves remain unanalyzed, as epiphenomena of more or less universal socio-cultural forces and practices, then one is unable to see the differences in views. What is needed is a way to identify which aspects of knowledge practices differ amongst people who have markedly different views about climate change.

Bringing together the psychological and sociological approaches, we see that both provide valuable insights into why people hold particular views about climate change. The two approaches usefully identify different scales and spheres of influence on people’s thinking about climate change, from individual cognitive processing and emotions, to socio-cultural meanings and practices, to larger societal trends and contextual factors (Smith & Joffe, 2012). Both approaches demonstrate that the role of climate science in informing people’s views varies across groups, and they help to explain why climate literacy and acceptance of climate change do not necessarily translate into action.

Despite the obvious disciplinary differences between the psychological and sociological literatures, both tend to exhibit the same theoretical limitations for understanding climate change views. In short, three such limitations have become apparent.

Firstly, as shown in Figure 2.2, many of the psychological and sociological studies examine statements of view only as the *product* or *reflection* of individual or societal attributes and processes ('knowers' and 'knowing'). The characteristics of statements about climate change ('knowledge'), such as their underlying structure or *organizing principles*, remain unexamined. Some literature analyzes the statements by summarizing and thematizing participant quotes, but these themes are made on the basis of descriptions of content matter about various aspects of climate change. The analysis entails identifying implied causal relationships between the attributes of participants, their thinking processes or social and cultural influences, shown on the left side of Figure 2.2, and the statements they produce, on the right side.

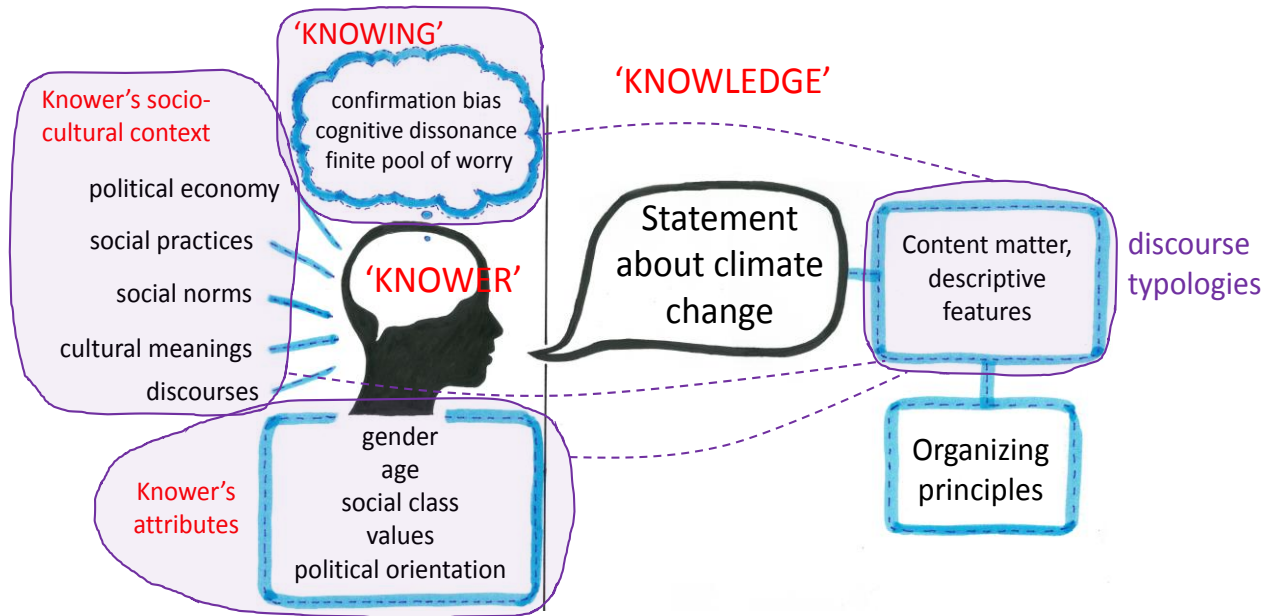


**Figure 2.2: 'Knowers' and 'knowing' are the objects of analysis (in purple) of many psychological and sociological studies**

The reason that statements of view are also important to analyze is that they are not reducible to the attributes of statement makers, their processes of thinking and feeling and their social structures. As exemplified in section 2.2 on pages 11-13, knowledge claims, in the form of statements about climate change, have properties of their own that have implications for whether or not they are accessible to particular groups of people and how powerful they are for understanding a new concept such as climate change and integrating it with existing understandings and practices. Some statements are abstract and complex while others are

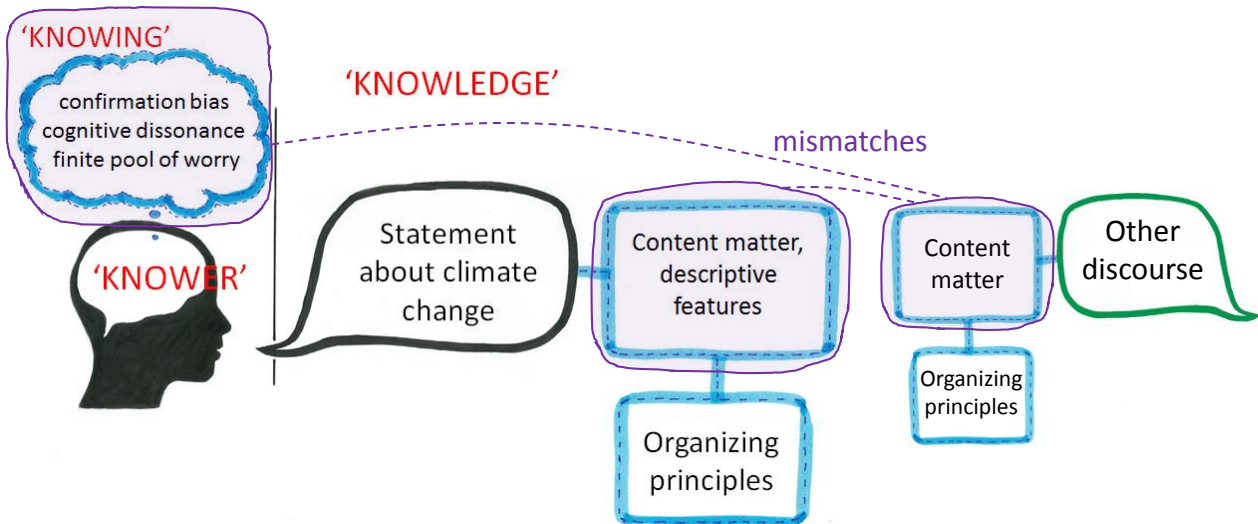
more concrete and simple, some are scientific and concerned with explaining the physical world, others deal more with emotions and identity. Some of the literature does thematize statements in these ways but it lacks a means of going deeper to identify the *organizing principles* that underlie these characteristics and that can provide a systematic means of comparing and contrasting statements about climate change that can vary endlessly in their content matter. This capability becomes important when making the link between the findings of specific cases and their applications in other populations, such as to improve the effectiveness of CCC&E (section 2.5).

A second limitation of the literature, depicted overleaf in Figure 2.3, is that some scholars do 'see' knowledge claims in the form of climate change statements or discourses but they reduce them to typologies. Regardless of their application in the psychological or sociological literature, typologies suffer from the same limitations in being static measures that homogenize everything within each type and do not capture processes of change within or between types. Further, each typology is described and demarcated on the basis of the content matter relating to climate change, such as on how severe climate impacts will be (Szerszynski & Urry, 2010) or on whether "radical" or "reformist" responses are appropriate (Dryzek, 2005). There is a potentially infinite number of ways of describing and demarcating discourses, and these demarcation criteria do not get at the underlying structural properties (organizing principles) of the discourses that might be common to one set of discourses and different to others. Understanding what underpins the differences in views or discourses, that is there organizing principles, would provide a way of systematically comparing and contrasting them and analyzing their properties and powers.



**Figure 2.3: Discourse typologies are based on analysis of the content matter or descriptive features of statements and are sometimes correlated with knowers' attributes, context or processes of knowing**

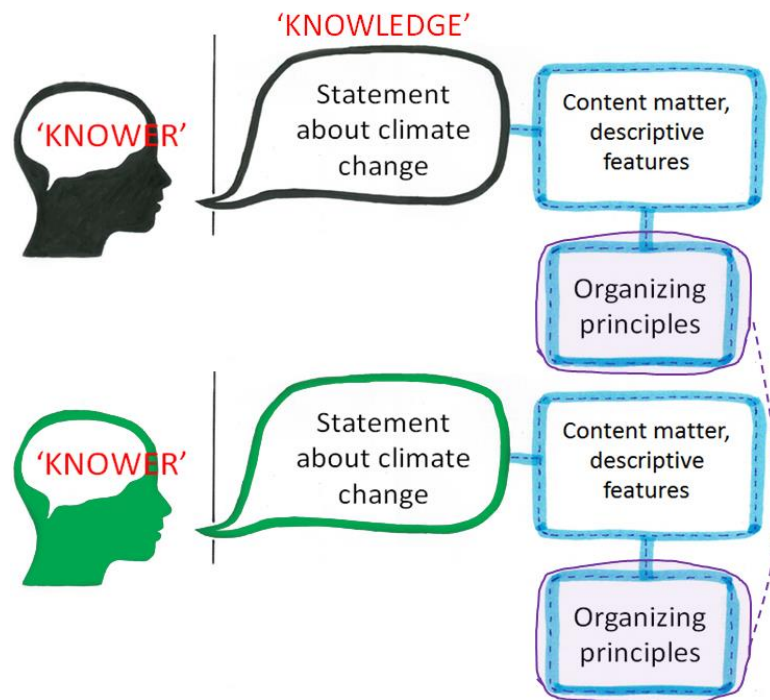
Thirdly, other studies do analyze knowledge claims in terms of describing their content matter themes but they do not have a theory that enables the structuring or organizing principles of the statements to be analyzed. As examples, the psychological literature identifies a mismatch at a descriptive level between the abstract, complex, intangible and global knowledge claims about climate change and lay people's personal, tangible ways of understanding the issue. Similarly, Lejano et al's (2013) comparative narrative analysis finds that lay people disengage from the impersonal, third person, IPCC discourses that entail "a running list of truth claims" because these discourses do not match their own ways of expressing climate change in first person narrative of personal experiences and resolution of problems. These examples represent useful first steps in identifying and thematizing some of the differences in scientific and lay discourses at a descriptive level (e.g. abstract versus concrete, complex versus simple). However, they lack a means of identifying the organizing principles that *underpin* each expression of abstract versus concrete and so on, and that could thereby characterize the mismatches more generally with broader applicability beyond the individual case.



**Figure 2.4: Psychological and narrative analyses identify mismatches between lay people’s ways of knowing about or expressing climate change and scientific climate change discourses**

In summary, the contributions of the literature lie mainly in the realm of ‘knowers’ and ‘knowing’: understanding views as products of individual thought processes and attributes, and broader social systems. This study acknowledges the validity, richness and usefulness of these bodies of work. Further, it proposes a complementary approach. Our understanding of views about climate change would benefit from analysis of ‘knowledge’: examining the views themselves as knowledge claims and identifying their organizing principles or underlying structure. The organizing principles provide a systematic basis on which to characterize, compare and contrast views of different groups of people and to analyze changes over time. Chapter 3 outlines a way of analyzing organizing principles, in the form of legitimation codes.





**Figure 2.5: A complementary approach would identify the organizing principles of statements made by different groups of people as a systematic basis for comparison.**

## **2.4 SHIFTING VIEWS AND FINDING COMMON GROUND**

This part of the literature review addresses my second research question on the shifts people make in their statements about climate change and any areas of agreement or common ground they find with others. The investigation focuses on shifts in a conversation rather than aggregate changes in public opinion in longitudinal studies (e.g. Capstick et al (2014) correlated changing views with sociopolitical changes in a number of countries). In particular, it investigates whether the literature identifies the organizing principles that underpin shifts and formation of common ground. The literatures on shifts (2.4.1) and common ground (2.4.2) are described separately, as research studies and climate change engagement events to date tend to focus on one or the other, not both. Academic studies have mostly employed interviews or focus groups to understand individuals' shifting views without seeking or describing moves towards agreement or common ground, while non-academic forums typically seek to find common ground or reach consensus without describing interactions or shifts that occur along the way.

### 2.4.1 Shifting views

People's views about climate change were introduced in section 2.3 as if they were relatively static and consistent. However, much of the qualitative research on the topic suggests that people's views (or at least statements about their views) are dynamic: they shift in interaction with others, and shift over time, sometimes from one sentence to the next. Given the characteristics of conversation as a performance that enacts social relations between actors (Goffman, 1959) and a collective meaning-making process (Norgaard, 2011), it should come as no surprise that shifts in knowledge claims or stated positions on climate change may occur throughout a conversation. The propensity to shift views, or so-called "attitudinal instability" (Carolan, 2010), would seem to be important to understand because it means that people do not necessarily hold a single, consistent, immovable position as a 'believer' or a 'denier'. It opens up the possibility that shifting views might be a pathway towards reaching agreement that climate change is a serious problem worth addressing, and towards finding common ground on solutions.

The literature features a small number of research studies involving focus groups, interviews or naturally occurring conversations that allow researchers to investigate shifts in participants' statements about climate change. By definition, shifts are not visible in one-off quantitative surveys that are typical of most psychological studies. Therefore the literature in this area is mostly qualitative and sociological, with some contributions from social psychology.

The shifts that people make may be contradictory or paradoxical. Lay people's representations of climate change have been found to shift between discourses of climate change being certain or uncertain, natural or unnatural, local or distant, gradual or catastrophic and to shift between the self or others' responsibility for responding to climate change (Olausson, 2011; Smith & Joffe, 2012; Wibeck, 2014). Carolan (2010) describes the "attitudinal instability" inherent in interviewees' stated desire to answer both yes and no to survey questions about whether climate change poses a serious threat. Alternatively, shifts may be more subtle, as in the ambivalent shifts described in section 2.3.2. Leahy et al (2010) and Threadgold's (2012) participants shifted between talking in generalized, personally distant terms about the environment and society in the future (apocalyptic) and about their own personal futures (optimistic), without making the connection between the individual and the global, or the short and long term. Norgaard (2011, p. 104) describes the example of an interviewee who said:

...that it was possible that climate change had gone so far that it could not be turned back, yet in the next sentence optimistically add[ed] that it would be “exciting” to see what would happen, as though we were discussing the outcome of a local soccer game.

Shifts in views have been explained in two main ways in the literature:

- within an individual person as the product of sociological ambivalence or “socially organized denial”, and as an ongoing meaning-making process as people navigate their way through the complexities of the climate change issue; and
- in interactions with others, as the product of priming, meeting social expectations and responding to new information or unfamiliar discourses.

On the former, shifts have been theorized as the product of sociological ambivalence (Carolan 2010) and “socially organized denial” (Norgaard, 2006; 2011), described in section 2.3. Several of Norgaard’s participants acknowledged their own shifts in turning away from problems like climate change in response to uncomfortable emotions, describing shifts as a learnt “survival skill” to carry on with daily life. Threadgold (2012) attributed the observed “two-track thinking” to participants’ perceived power – and social expectation from parents and others – to take direction of their personal lives, in contrast to their perceived powerlessness to make a difference on climate change. Shifts in stated views have also been considered as reflections of lay people’s struggle to reconcile expert and personal knowledges and to negotiate a sense of meaning from abstract, global issues such as climate change. While people discussed the perceived inadequacies and bias of the science they also “recognized their dependence on expert knowledge” to make sense of climate change (Bulkeley, 2000). Similarly, Wibeck (2014) identified participants’ shifts between gradualism and catastrophism discourses as replicating those of the media.

In terms of shifts that occur in interaction with others, Olausson (2011) noted that focus group participants’ “spontaneous” conversations with the researcher present but not interacting were quite different to those prompted by the researcher’s question, “Do you think there is any sort of uncertainty surrounding the knowledge about climate change?”. The same participants who in spontaneous conversations replicated typical Swedish discourses of certainty about climate change, responded to the uncertainty question by constructing climate change as being uncertain. Thus, people’s statements may shift in line with perceived social

expectations of particular answers; in this case the shifts appeared to reflect participants' responses to the researcher's priming of the conversation in a particular direction. Shifts may also occur as people are introduced to and consider the "multitude of meanings" of climate change (Bulkeley, 2000) and its complex web of impacts. As an example, Wibeck (2014) describes how a participant revised his assessment of climate change as being basically unproblematic in Sweden, in light of a new concept introduced by another participant about the arrival of climate refugees. Finally, van Prooijen and Sparks (2014) found a strong effect of priming with values on people's stated beliefs about climate change and climate action. After being asked to write about values such as fairness, kindness and tolerance, participants who had initially expressed skepticism about the human impact on ecological stability then expressed stronger belief in climate change risks and individual efficacy to reduce risks, than a control group who wrote about food. Self-affirmation theory posits that the self-affirmation of values boosts positive self-concept and provides a buffer against the threat of climate change.

#### **2.4.2 Finding common ground**

Common ground can be defined simply as content on which people agree. Of particular interest are examples in which people appear to hold divergent views about climate change and appropriate responses to it, and through dialogue, are able to find one or more areas of agreement. This might involve finding common ground that already existed, or might be achieved through convergent shifts in stated positions during the dialogue.

The climate change literature on common ground tends to be either more theoretical, advocating for finding consensus and theorizing about how to achieve it, or empirical, describing the outcomes of actual forums such as international climate negotiations that have found common ground amongst parties, but without describing the interactional processes involved and their underlying basis. Hence a disconnect exists between the empirical without theoretical and theoretical without empirical application to observe what occurs in practice.

In theoretical examples, Hoffman (2012) suggests that "broker frames" have the potential to resonate with people from across the political spectrum and hence might be the starting point for finding common ground on solutions. Based on statements made by high profile 'unusual suspects' not usually identified with action on climate change, such as Pope Benedict XVI, the US Military and the medical journal *The Lancet*, these "broker frames" include conservative values, economic competitiveness, national security, and health. Depending on the context,

climate change would be linked to one or more compatible frames to appeal to a wide audience. Prelli and Winters (2009) used Dryzek's discourse mapping approach to identify areas of congruence and difference between environmental and 'green evangelicalism' discourses, concluding that "there are more grounds in common than is typically supposed". In experiments, frames that have been found to appeal across groups of people including skeptics and deniers, include the benefits of taking action in terms of improved health (Maibach, Nisbet, Baldwin, Akerlof, & Diao, 2010), promotion of scientific and economic progress, and engendering a more caring and considerate society (Bain, Hornsey, Bongiorno, & Jeffries, 2012). However none of the above studies report on the application of these concepts in practice, which would allow for an investigation of the basis of any common ground reached and the processes involved (interactions and shifts) in reaching it.

There is a wide range of 'real world' examples of people with opposing viewpoints finding common ground on responses to climate change. A prominent Australian climate activist (Rose) and skeptic (Minchin) who featured in a nationally-screened documentary titled "I can change your mind about climate change" found renewable energy to be a mutually acceptable solution (Mayor, 2012). Rose and Minchin came to realize that their climate change views were irreconcilable because of their basis in opposing worldviews, and so they shifted focus to the mutually acceptable solution of renewable energy. In the US, environmentalists and national security analysts have come together over a shared interest in reducing reliance on foreign oil (Selin & VanDeveer, 2007). UK politicians from across the political spectrum achieved cross-party consensus to pass legislation setting emission reduction targets and an energy bill to contribute towards meeting the targets (Giddens, 2011). According to Giddens (2011), consensus rested on a recognition that the science demanded much more substantial action much more quickly than was currently being pursued, and that such action would be possible only through agreeing to put aside short-term political interests. That is, politicians were required to change their practices and the priority they afforded to the science vis-a-vis their political preferences.

### **2.4.3 Discussion**

There are several small bodies of literature that investigate shifts in views and common ground. Although not identified as such in the literature, their findings give tantalizing glimpses of some patterns or principles that might apply more generally than the individual case. Several of the examples involve shifts between scientific knowledge and personal, direct experience of

weather events, and from an abstract, global concept to one that applies in a specific context to individual people (such as climate refugees in Sweden). This suggests that shifts might be more generally associated with moves from complex, abstract concepts to those that are local and tangible, and from expert knowledge to personal beliefs. Other examples suggest that common ground might be associated with negotiating the nexus between individual and cultural preferences and ways of knowing on the one hand, and physical realities and scientific knowledge on the other. The Rose/Minchin example suggests the potential for finding common ground by making visible the role of worldviews and identifying solutions that are compatible with those. The example of the UK politicians (Giddens 2011) shows the potential for people to shift towards more fully accepting the climate science and recognizing the incompatibility of some political preferences with physical realities. These findings provide useful launching points from which to investigate the organizing principles of such shifts and areas of common ground.

Furthermore, there are implications for the design of engagement events that arise from the literature concerning shifts as the product of social interactions and expectations. For example, the researcher's level of involvement in the conversations and choice of questions will influence participants' stated views. Intervention in the form of asking a question can prime the conversation in particular ways. With the introduction of new points of view into a conversation, people's stated views sometimes shift.

Some methodological and theoretical gaps in the literature on shifts and common ground have become apparent. The review suggests that to date, research studies and climate change engagement events have examined either shifts or common ground, but not both together. Academic studies have mostly employed interviews or focus groups to understand individuals' shifting views without seeking or describing moves towards agreement or common ground, while non-academic forums typically seek to find common ground or reach consensus without describing interactions or shifts that occur along the way. Investigating both shifts and common ground together could facilitate examination of relations between the two: that is, which types of shifts or other interactions are associated with the outcome of conversants reaching agreement and finding common ground? This would allow one to identify underlying bases for finding common ground that could potentially apply more broadly beyond individual cases, and

could therefore have important implications for CCC&E attempts to find mutually acceptable climate change solutions.

Shifts in views have been examined primarily within one person's statements. An instructive further question might be what happens in interaction with others, particularly between people with opposing views. For example, what happens when a climate advocate and a skeptic come together in conversation? If their views shift, then on what basis?

In terms of theoretical limitations, the literature tends not to 'see' knowledge. Some literature analyzes the content matter of shifts and common ground, for example in the suggestions for "broker frames". Without also identifying their organizing principles, one cannot tell why particular frames appeal to particular audiences. To do this would require a consistent, systemic way of characterizing the nature of both the frame and the audience so as to enable comparisons between the two. In other words, it requires identifying the organizing principles that underpin the frame and the audience's knowledge practices. Other literature conceptualizes shifts as the *product of* sociological ambivalence, perceived powerlessness, meaning-making processes, and social expectations in interactions. As outlined in the previous discussion, all of these are cognitive processes and attributes of being a social actor. The literature thus delivers useful insights into how knowers' attributes, context and knowing processes influence shifts in statements about climate change, as shown overleaf in Figure 2.6.

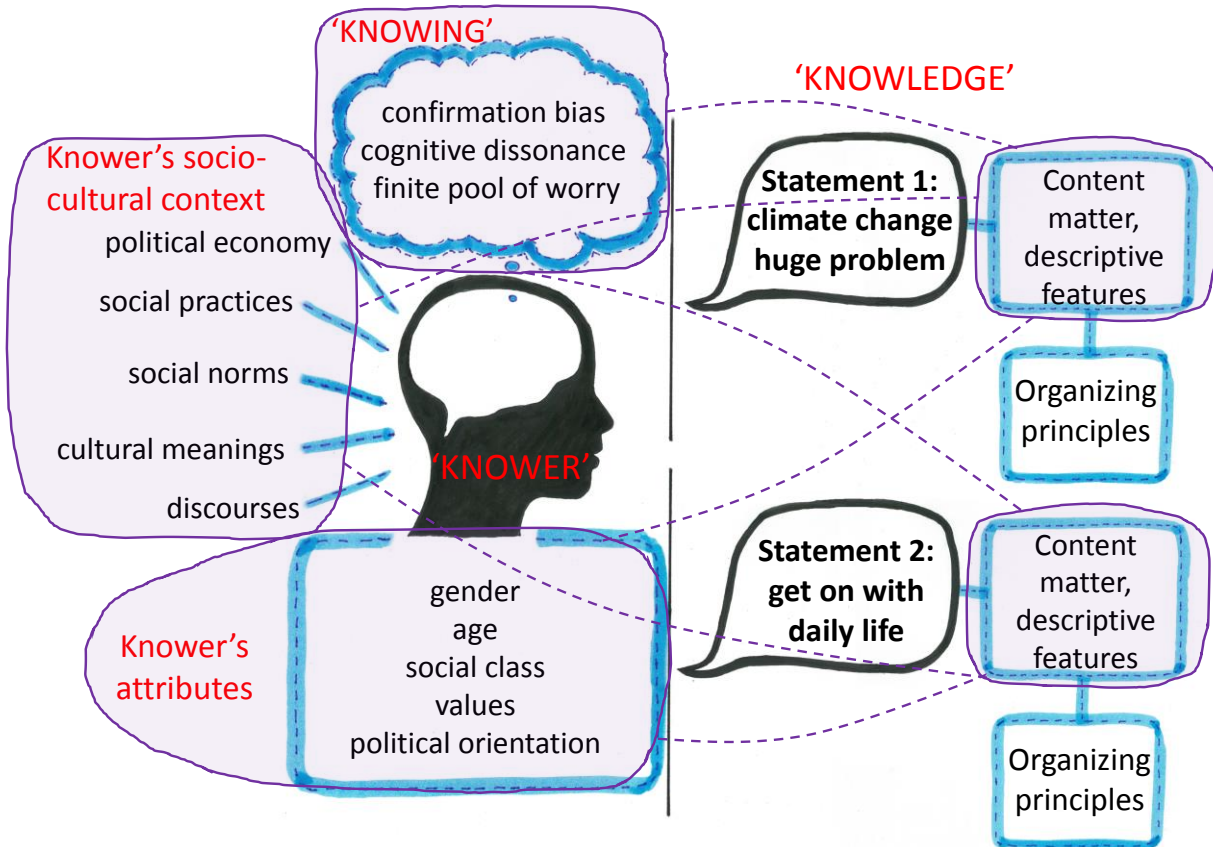
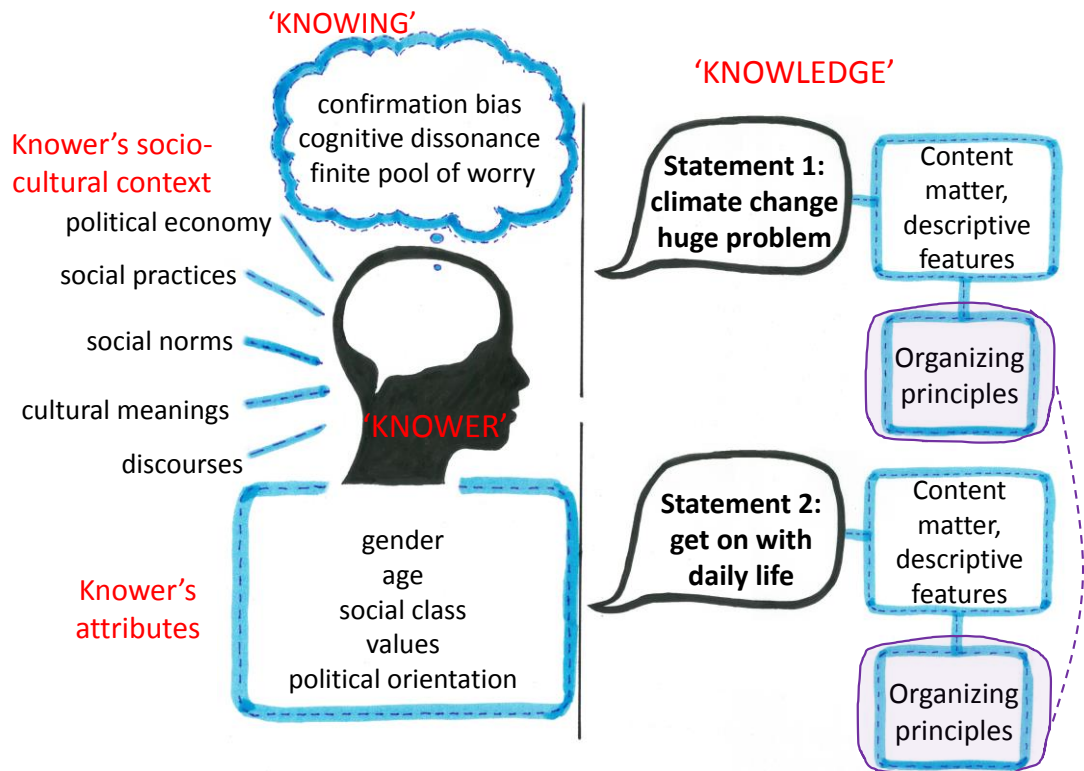


Figure 2.6: Existing approaches examine the influence of knowers' attributes, context and knowing processes on shifts.



What could helpfully complement the existing literature is a consideration of shifts as a substantive change from one statement of view about climate change to another ('knowledge'). Studying the statements themselves and their organizing principles, as shown in Figure 2.7, would then enable an exploration of the nature of the shifts and any patterns in the statements being shifted from and to.



**Figure 2.7: A complementary approach would compare and identify patterns in the organizing principles that underpin shifting statements about climate change.**

## 2.5 CLIMATE CHANGE COMMUNICATIONS AND ENGAGEMENT (CCC&E)

The literature described in this section relates to the study's third research question, which asks how the insights into views and shifts can inform the design of effective CCC&E. This part of the literature review aims to understand the field's principles and strategies and existing recommendations for CCC&E in the literature (2.5.1). It also briefly touches on what else might be required beyond CCC&E to encourage people to accept climate change and take appropriate action (2.5.2).

### **2.5.1 CCC&E principles and recommendations**

Brown and Riedy (2006) characterize CCC&E approaches as adopting a ‘translation’ or ‘transformation’ strategy, or both. Translation involves “connect[ing] with people just as they are, motivating and informing them in a way that is in alignment with how they already see the world” (Brown and Riedy, 2006, p. 666). Conversely, transformation involves changes in people’s ways of viewing and knowing about the world so that they are better able to cognitively, emotionally and practically deal with the message about the stark realities of climate change. Brown and Riedy outline the value of engaging people through translation while working on the slower and more challenging process of transformation (further described in chapter 7).

Various methods of audience segmentation have been employed to tailor CCC&E to target audiences. Segmentation can form the basis of a translation, transformation or mixed approach. Segmentation is typically done on the basis of the audiences’ stated views or demographics, for example on the ‘Alarmed’ to ‘Dismissive’ categories (Maibach et al., 2011), on “values and worldviews” (Rogers et al., 2012) and shared “social representations” of climate change (Wibeck, 2014).

Although often not labelled as such, these principles – audience segmentation, translation and transformation – form the backbone of many CCC&E practices and recommendations. The literature makes recommendations in terms of the message form and content, the choice of messenger, and at the engagement end of the CCC&E spectrum, the methods employed. Recommendations in the literature for each of these elements are described in turn. They are principally geared towards translation except for one that is indicated as transformation.

#### ***The message***

The findings of section 2.3, about the importance of people’s values, beliefs, shared cultural meanings, norms and group identities in shaping their views about climate change, suggest that effective CCC&E needs to take account of personal attributes and the socio-cultural context. As examples, Unsworth and Fielding (2014) recommend invoking norms that are congruent with climate action, such as that of the parent or grandparent looking after future generations. Working from a ‘cultural cognition’ model, Kahan (2012) advises:

Don't try to convince people to accept a solution by showing them there is a problem. Show them a solution they find culturally affirming, and then they are disposed to believe there really is a problem in need of solving.

There are likely to be several dimensions to a “culturally affirming” solution. For example, on the role of political ideology, Feygina et al (2010) found that conservatives typically perceive climate change responses as a threat to existing political and economic systems. Increased support for climate action was found when messages appealed to conservative values of protecting “the American way of life” by maintaining a healthy natural environment, rather than conventional framings of environmental risk.

Highlighting the importance of emotions, O'Neill and Nicholson-Cole (2009) found that fear-inducing messages and images about climate change lead to disengagement from the issue unless they also stimulate a perception of strong self-efficacy. Messages that did this most effectively showed what people could do personally. In fact, several scholars have recommended a shift in the focus of CCC&E from the problem of climate change to its solutions, both because the problem tends to evoke fear and because the ultimate aim of CCC&E is action (Kahan, 2012; Maibach et al., 2010; Wibeck, 2014a). One way to do this is to avoid communicating the climate science or even to explicitly downplay it, as done in the *CarbonNation* film with its tagline: “A climate change solutions movie (that doesn't care if you believe in climate change)” (Singal, 2014). Such approaches are controversial: Romm (2011) asserts that avoiding the topic of climate change shies away from confronting its root causes and unhelpfully shifts the locus of attention elsewhere. Nevertheless, it is clear that there are many potential reasons for taking action beyond direct climate change motivations, including the health and energy independence benefits mentioned in section 2.4.2 on common ground.

There is some debate in the literature as to whether communicating the science of climate change is necessary or advisable. The “information deficit model” which assumes that citizens simply require more information in order to understand and respond to climate change has been much critiqued in the literature (Bulkeley, 2000; Chess & Johnson, 2007). By itself, it is clear that climate literacy does not drive concern or action, and any information about climate change needs to resonate with the audience's existing values and beliefs otherwise it is likely to be rejected (Campbell & Kay, 2014; van Prooijen & Sparks, 2014). In recent years, CCC&E has

tracked the shift from a 'public understanding of science' to 'public engagement in science' model with increased validation of other knowledge domains including "lay knowledge" (Nerlich, Koteyko, & Brown, 2010; Wibeck, 2014a). However, Whitmarsh, O'Neill and Lorenzoni (2013, p. 14) note an "unresolved tension between recognizing and incorporating the plurality of views and values, and the need to provide clear, credible and usable information". Similarly Moser (2010, p. 36) asserts that there is a place for climate literacy efforts when she writes that policymakers and the general public are unlikely to develop or support more radical measures "if they do not have a much clearer picture of the urgency of the situation".

To the extent that scholars advocate communicating the climate science, many recommend making its abstract and complex concepts more concrete, tangible, visible, local, certain, immediate and personally relevant and in lay rather than scientific terms (e.g. Center for Research on Environmental Decisions, 2009; Lorenzoni et al., 2007). Examples in practice include the "Save Our Syrup: Stop Global Warming"<sup>3</sup> campaign in New England (Selin and VanDeveer, 2007) and an Australian agricultural outreach program that aimed to "sidestep the whole debate and reframe the issue in a more practical space" around farm productivity (de Blas, 2010). Based on narrative analyses of scientific (IPCC) and lay discourses, Lejano et al (2013) suggest that scientific discourses lack influence because they are isolated from "other issues, such as jobs and recession, that occupy people's everyday lives", and so there is a need to bridge the gap between the two. Further, communicating first-person accounts of those already acting on or affected by climate change could help to "bring the phenomenon closer to everyday life and to put a human face to it" (Lejano et al, 2013, p. 69).

While the above recommendations are geared towards translation, several scholars suggest the need for CCC&E to catalyze transformation, although not usually named as such. Ytterstad (2014) critiques the practice of tailoring communications to existing frames (i.e. translation), asserting that our current set of culturally resonant frames is not up to the task of adequately addressing climate change. Instead what is needed is political advocacy and shifts to "natural realism" or "Gramscian realism" (i.e. transformation). Ockwell, Whitmarsh and O'Neill (2009) advocate for shifting the public from individual behavior change to also advocating for

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<sup>3</sup> Referring to the production of maple syrup, which declines with increasing temperature (Selin and VanDeveer 2007).

regulation. Thompson and Schweizer's (2008) list of CCC&E recommendations includes "encourage your audience to engage in systems-thinking, and help them to understand dynamic interrelationships and interconnections" and "link to global patterns and collective action". However, while the need for transformation has been articulated in these studies, the steps to achieve it in practice have not.

### ***The messenger***

In addition to the message content, the choice of messenger (communicator or engager) also influences how the audience responds to CCC&E. Numerous studies have found that messages from in-group 'people like me' such as peers, , political leaders, opinion leaders and other members of the audience's cultural community are more influential than those from the out-group (Kahan et al., 2011; Moser, 2010). This forms the basis of recommendations for peer CCC&E, in which in-group opinion leaders become advocates for climate action (Unsworth & Fielding, 2014), potentially after training by climate experts (Nisbet & Kotcher, 2009) and by engaging existing social networks (Marshall, 2014). As to whom these trusted sources are likely to be, Australian surveys suggest that "independent" scientists are the most trusted and politicians, the media and celebrities the least (Buys, Aird, Megen, Miller, & Sommerfeld, 2014; Morrison et al., 2013; Reser et al., 2012).<sup>4</sup>

### ***Engagement methods***

Several scholars have argued the potential for smaller-scale, more participatory engagement on climate change to overcome some of the shortcomings of mass, top-down communication such as a lack of trust in the institutions communicating climate change (Corner & Randall, 2011; O'Neill & Hulme, 2009). Dialogic forums could allow the general public to discuss their thoughts and experiences of climate change (Moser & Dilling, 2010), and get disagreements based on values, worldviews and ideology "out into the open rather than obscuring them by fighting political battles using the language of science" (Corner, Whitmarsh, & Xenias, 2012). Group-based engagement programs can provide support to those grappling with the concept and realities of climate change, and accountability for people to follow through on their commitments to reduce emissions (Rabkin & Gershon, 2010). Participation in local politics and

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<sup>4</sup> A caveat: while the survey findings are surprisingly consistent across different cultural groups and levels of acceptance of anthropogenic climate change, those most dismissive of climate change tend to trust conservative politicians and talkback radio hosts more than they trust any type of scientist, "independent" or otherwise.

engagement activities is said to have the potential to create “the supportive community that is a necessary (though not sufficient) condition for people to face large fears about the future” and to “reduce the gaps between abstract information and daily life, decrease the sense of a double reality, and bring home impacts in economic, infrastructural, and physical terms” (Norgaard, 2011, p. 228). In these ways local engagement may represent a stepping stone towards larger social and political change.

### **2.5.2 Beyond CCC&E**

While the ultimate goal of CCC&E is to encourage and facilitate action on climate change, several scholars have recognized its limits in achieving this goal and the need for other facilitating processes to occur, particularly around skills, practices and system change. Even when people are on board, they also need to know how to act effectively (Lorenzoni et al., 2007): they need “procedural knowledge (action strategies)” (Rogers et al., 2012). Social Practice Theory (Shove, 2010) draws attention to the need to consider all three elements of practices, namely meanings, materials and skills, and to shift the norms and values that shape social practices.

On system change, Lorenzoni et al. (2007) assert that what is required is “a radical change in values, behaviour and institutions towards a paradigm of lower consumption”. However, transforming our political and economic systems is challenging because of the vicious circle in which many people find themselves:

[That] many people perceive no viable political options is a central part of why they are not responding. ...Because people find real change unnecessary, beyond their imagination, or politically unfeasible, they offer or look to solutions that tinker with the system instead (Norgaard, 2011, p. 225).

There is therefore a need to find ways to replace the vicious circle with a virtuous circle that makes large-scale actions necessary, imaginable and feasible. This is clearly no small task, with no ‘silver bullet’ solution. Chapter 8 provides some preliminary suggestions in this direction (8.5).

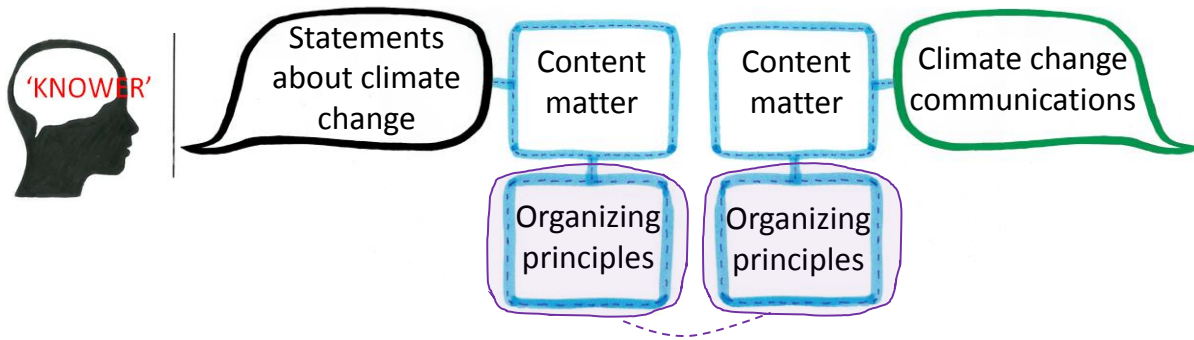
### **2.5.3 Discussion**

The CCC&E literature suggests a number of implications for the present study. Firstly, the principles of translation, transformation and audience segmentation provide a foundation for

the CCC&E recommendations in chapters 7 and 8. In terms of methodological implications, the findings about the value of dialogue, group-based engagement and peer-to-peer communications suggest that these would be valuable to include in the group engagement events for data collection, described in chapter 3. Understanding the psychology of climate change can reduce the risk of running counterproductive CCC&E, for example by making audiences fearful without also boosting their self-efficacy to deal with the issue. Finally, the implications of section 2.5.2 are to recognize the limits of CCC&E and the need for other changes to occur, as outlined in the 'beyond CCC&E' recommendations in chapter 8.

Currently, CCC&E recommendations in the literature tend to reflect and reproduce the limitations of the literatures on views, shifts and common ground, namely that statements ('knowledge claims') are reduced to products of thought processes ('knowing') or power relations between 'knowers'. If statements are examined, then only their content matter is analyzed and arranged into typologies. Specifically, current methods of tailoring CCC&E messages to audiences are based on content matter. Message "framings" or "discourses" are demarcated on the basis of their content matter relating to climate change. Audience segmentation is also based on correlations between content matter such as stated views about the existence of climate change and psychographic (e.g. values) or demographic (e.g. gender) attributes. This means that there is an almost infinite number of ways in which audiences and messages can be segmented and typologized.

Thus, an opportunity exists to identify, from first principles, what needs to be matched in translation and shifted in transformation, in terms of organizing principles. As shown overleaf in Figure 2.8, this means understanding the characteristics of the audience in terms of the organizing principles underlying their knowledge practices on the one hand, and the organizing principles of CCC&E elements (message, messenger and methods) on the other. It would show the changes in knowledge practices involved in transformation, for example, towards greater emphasis on the physical realities of climate change (Ytterstad's reference to "natural realism") and towards more complex, abstract and interconnected concepts ("systems thinking").



**Figure 2.8: A complementary approach would identify the organizing principles of audiences' knowledge practices and those of climate change communications.**

## 2.6 CONCLUSION

This chapter has reviewed the literature that relates to the three research questions of the study, concerning people's views about climate change, shifts in views and common ground, and climate change communications and engagement (CCC&E). It identified two main bodies of literature, psychological and sociological, that contribute a number of insights into the research problem and questions. The psychological literature reveals the ways in which views are shaped by individual thought processes and attributes relating to values, attitudes, worldviews, emotions and other interior constructs. The sociological literature considers climate change views as products of power relations, the political economy, social statuses, cultural norms and socio-cultural practices. Sociological approaches show how phenomena that at first glance might appear to solely reflect individual choices and thought processes are also reflections or expressions of social, cultural, political and economic systems. Amongst other things, this enables theorization of "socially organized denial", by which climate literate people nonetheless ignore climate change in their daily lives.

Both bodies of literature feature examples in which the content matter of views is thematized into types, frames or narratives. These represent useful first steps towards identifying the structuring or organizing principles that underpin the views. The themes or types can be related to individual or group characteristics (such as level of educational attainment or political orientation), thus providing steps towards accounting for differences in views between different groups of people. The literature also reveals that climate change views are dynamic



rather than static, in that throughout a conversation people's stated views may shift in their content matter, for example between climate change being problematic or not.

From the literature reviewed in this chapter, several methodological implications for the present study have become apparent. The literature suggests that qualitative research involving forums in which people can express their views with minimal prompting by the researcher would allow the researcher to hear participants' views about climate change (Carolan, 2010; Whitmarsh, 2009). Further, the design of such forums can fruitfully draw on the CCC&E literature. Relevant findings include that a fear response tends to be counterproductive unless self-efficacy is also emphasized, and that groups can provide support and accountability for members to deal with the climate change issue and implement responses.

The discussion sections throughout this chapter have pointed to three theoretical limitations of the literature for understanding climate change views. The first of these occurs when statements of view are considered as *products of* attributes of the people making statements ('knowers') and their processes of 'knowing'. These studies do not 'see' statements as knowledge claims with characteristics of their own that are irreducible to those of the claimers' attributes or societal influences. Here, the statements become products of individual attributes (e.g. gender), thinking processes (e.g. cognitive dissonance), the workings of capitalism (Leahy), governmentality through powerlessness (Threadgold) and cultural norms (Norgaard). These and similar studies describe only the content matter relating to the topic of climate change (e.g. nature, heat, daily life), and this content becomes simply a means by which to explore psychological, social, cultural and economic forces. It is true that people's statements about climate change are shaped by such forces, and they are important to understand, but they are only part of the story. As knowledge claims, statements about climate change also have properties and powers of their own (as described in 2.2).

The second limitation concerns literature that does 'see' the statements themselves but does not have a theory that enables analysis of their characteristics, and so only the topic matter or themes are described. An example is the narrative analysis of scientific and lay discourses by Lejano et al. (2013). Ideally, we would have a way of characterizing what differentiates the abstract, complex messages of climate science from the personal, local, tangible lived

experience that informs lay discourses, to reach beyond the descriptors of “abstract” and “tangible” to their organizing principles.

Thirdly, some literature does ‘see’ the statements themselves and divides them into types, as in the discursive typologies articulated by Hulme, Szerszynski and Urry, Dryzek and others. However the limitations of typologies are that the demarcation criteria and boundaries are arbitrary divisions of the content matter of statements, such as whether climate change is real or not (Maibach et al.), or whether solutions are technological or otherwise (Dryzek). Typologies homogenize everything within each type, and do not provide a systematic way of capturing processes of change within or between types.

In summary, the main gap identified in this review is research that reveals not only the influences on views about climate change such as people’s differing values or the political economy (relating to knowers and knowing), but also the internal structure or organizing principles of these statements (knowledge). Bringing together the findings outlined above, what is needed to address the central research questions of this study is an approach that is capable of distinguishing between the different climate change views of different groups of people and theorizing about the basis of these differences in terms of knowledge form and structure (organizing principles), as well as the basis of shifting views and common ground. Therefore the opportunity for the present study is to identify:

- the organizing principles, or underlying structure, of the climate change views of different groups of people (shown in Figure 2.5). These provide a systematic basis on which to characterize, compare and contrast views and to analyze changes over time. They also afford portability to empirical findings, to make claims beyond the specificities of individual cases;
- the organizing principles of shifts in stated climate change views (Figure 2.7), particularly when people reach agreement or common ground that climate change is a problem deserving of more substantial action, or agreement about particular responses to it;
- a theoretical basis for designing CCC&E for different groups of people, that is informed by an understanding of the organizing principles of both the audience’s knowledge practices and the CCC&E elements of message, messenger and methods (Figure 2.8).

This would provide the foundation for intentionally matching the two (translation) or shifting the audience's practices (transformation).

Carrying out such analyses would not only offer a novel perspective on climate change views, shifts and communications, but would do so in a way that complements much existing theory and research.

In conclusion, this literature review has laid the groundwork for chapter 3 that describes the ways in which the groundwork laid by the existing research is built upon in the present study, in its research purpose and questions, adoption of a theoretical framework, selection of research participants, and purpose and methods of engagement. The main gap identified in the literature is in analyzing the characteristics of statements of view. Chapters 4 to 6 present such analyses of views, shifts and areas of common ground, and their organizing principles, in relation to the statements made by two groups of research participants. The present chapter also established the rationale for a reconceptualization of CCC&E concepts and examples in terms of their organizing principles, so as to contribute additional insights to inform the design of effective CCC&E for diverse audiences (chapters 7 and 8).

## **CHAPTER 3: METHODOLOGY**

### **3.1 INTRODUCTION**

The literature review (chapter 2) identified a number of implications and limitations of the literature that are relevant to this study. It concluded that the literature tends to analyze views about climate change as products of the psychological and sociological phenomena that shape them ('knowers' and their processes of 'knowing'). What would complement this research is analysis of the statements themselves and the organizing principles that underpin them ('knowledge'). Therefore, to address research question 1 concerning the views people hold and the basis for differing views, the study sought a theoretical framework and methodology that would enable analysis of the organizing principles of views. The organizing principles provide a systematic basis on which to compare and contrast the views of different people. Secondly, the literature review revealed that many of the empirical studies record participants' static responses about climate change or they track changes in static responses over timescales of months or years. The present study is also interested in dynamic interactions between participants in conversation that might result in shifts in their views and thereby the possibility of coming to agreement, for example on climate change solutions (research question 2). The study therefore needed to employ methods capable of generating the types of dialogic interactions in which participants would potentially shift views and find common ground amongst each other.

The following sections detail the theoretical and methodological approaches employed in the study to address the three research questions. Section 3.2 outlines the rationale for selecting Legitimation Code Theory (LCT) as the study's analytical framework. The rationale for a qualitative case study approach is described in section 3.3, followed by section 3.4 on data collection, which provides details about participant selection and recruitment, and the design of modified focus groups and follow-up interviews. Section 3.5 details the three-step analytical process employed in the study, that generates progressively more abstract, condensed and theoretical findings while maintaining empirical fidelity. Section 3.6 outlines some ethical considerations for the study, followed by the strategies used to enhance the quality of the research (3.7). The conclusion (3.8) summarizes the main findings of the chapter and outlines their implications for the remainder of the thesis.

## **3.2 Theoretical framework**

### **3.2.1 The task**

Chapter 2 identified particular strengths of the literature in describing and theorizing the psychological and sociological processes and systems that shape people's views. It identified an opportunity to complement this research by analyzing the characteristics of knowledge claims, beyond their content matter. Empirical description of the content matter is insufficient because it does not enable the researcher to see what underpins the differences and thereby to investigate the possibilities of changing these underpinnings. The task for the present study is therefore to analyze the organizing principles underpinning each area of interest to the study, namely climate change views, shifts, common ground and CCC&E. LCT was selected as an analytic framework because it provides the tools for analyzing these organizing principles.

### **3.2.2 Legitimation Code Theory**

Legitimation Code Theory (LCT) is an analytic framework that is grounded in social realism. Social realism holds that knowledge is "not only social but real (hence its name) in the sense of possessing properties, powers and tendencies that have effects" (Maton, 2014, p. 9). LCT builds on a number of long standing sociological and other traditions. Primarily, it integrates and extends insights from the sociological frameworks of Basil Bernstein and Pierre Bourdieu, as well as drawing on philosophical traditions such as critical realism (e.g. Bhaskar) and critical rationalism (e.g. Popper). Maton (2014) provides a detailed discussion of how LCT integrates these foundations and influences.

LCT has been characterized as an "explanatory framework", a "conceptual toolkit and analytic methodology", rather than a meta-theory or a paradigm (Maton, 2015). It "enables knowledge practices to be seen, their organizing principles to be conceptualized, and their effects to be explored" along a number of dimensions (Maton, 2014). Here "knowledge practices" refers to any practice that involves 'knowledge' including claims or statements of opinion. In the context of this study, the knowledge practice under investigation is people's talk about their beliefs and attitudes concerning climate change, and a 'knowledge claim' refers to a statement of view.

LCT enables researchers to get beneath the surface features of empirical situations to explore their organizing principles or *legitimation codes*. A useful analogy is the genetic code that

underlies people's surface features (expressions of the code) such as height and eye color. LCT aims to get at the genetic codes of knowledge practices, in order to reveal the fundamental 'rules of the game' or bases of legitimation of different contexts and what they enable or constrain (Maton, 2014).

In summary, LCT provides a way to analyze both sides of Figure 1.2, both *knowers/knowing*, the dispositions of claim makers and relations between them, and *knowledge*, the nature of their knowledge claims. It helps to explain why a particular climate change statement might resonate with one audience but not another, and why the same content matter, expressed in a different way by a different messenger, might be accepted by an otherwise resistant audience.

The remainder of this section describes the central LCT concepts of constellations, cosmologies and legitimation codes in theoretical terms and as they pertain to this study, followed by the two dimensions of LCT that are employed in the study, namely Specialization and Semantics. It then outlines the LCT concepts of code match, code clash, code drift, code shift and code range that provide the basis both for understanding the different views of the two groups in chapters 4 to 6 as well as for developing CCC&E recommendations in chapters 7 and 8. Finally, the task involved in addressing the three research questions is reconceptualized in LCT terms, to demonstrate how the theory underpins the analysis undertaken in the study.

### ***Constellations and cosmologies***

A *constellation* is an arrangement of stances that reflects what is valorized within a social context. As described by Maton (2014):

All systems of ideas and practices – scientific, religious, political, moral, aesthetic, athletic, linguistic, etc. – comprise a number of stances chosen from a potential array, arranged into patterns, condensed with meanings, and charged with valuations ... to create a semantic structure of constellations.

The analogy here is an astrological constellation chosen from a select number of stars in the sky. Out of a vast number of points to choose from, people may group together certain ones into a cluster to create a recognizable form that is distinct from other possibilities (e.g. Cancer the crab), condense meanings into it (Cancerians are generous), and charge it with positive or negative judgment (Cancerians are good people).

In this study, constellations are the arrangements of knowledge claims (statements) of climate change views, in groupings that have meaning to the claim-makers. In an example, quotes representing positively and negatively appraised constellations are shown overleaf in Figure 3.1. The arrangement of constellations shapes what Bourdieu termed the 'space of possibles', the range and combinations of stances viewed by actors as possible within a field (Maton, 2014). Constellations are often strongly bounded, which serves to obscure possibilities of combining concepts from more than one constellation. Mentioning one concept from a constellation tends to bring with it the condensed meanings and judgments of the constellation and to evoke other concepts from the same constellation: they come together as a package. However they may change over time through the addition, revaluation or removal of elements and meanings (Maton, 2014).

The contents of constellations are not random but reflect a *cosmology*. Every social field of practice, whether an academic field, a vocational field or a community group, has a cosmology, a worldview or logic of the system, that differentially valorizes knowledge practices and claims in the field. It is what makes one system of ideas and practices valorized and thereby legitimate, and another not. Cosmologies are the worldviews that generate constellations and charge them with meaning. The nature of cosmologies can be revealed by analyzing their organizing principles along a number of dimensions. Before turning to the dimensions, we need to understand organizing principles in the form of legitimation codes.

### ***Legitimation codes***

In each social field, actors' beliefs and actions represent competing claims to legitimacy within the field. These 'languages of legitimation' can be analyzed in terms of their underlying structuring or organizing principles, or *legitimation codes* (Maton, 2000). To date, LCT has articulated five dimensions of organizing principles, of which two are employed in the present study: Specialization and Semantics.

Figure 3.1 brings together the LCT concepts mentioned thus far, to illustrate how they relate and how they are expressed in the present study. The figure shows a field and context, here, a segment of the climate change debate in Australia, that have a cosmology or worldview. The cosmology generates constellations, in this example in a binary structure, one of which is

positively evaluated ('good') and the other negatively evaluated ('bad'). The other element in the figure is a person, a claim-maker, whose 'disposition' can be thought of as their coding orientation: their repertoire or usual ways of knowing and talking about climate change. For example, in this study, the lay and think tank participants had different dispositions by virtue of their educational backgrounds, professions, life experiences and so on. More generally, people's knowledge claims reflect both their dispositions and the cosmology of the field. (The concepts of code match and code clash in a later section deal with scenarios in which the legitimation codes underpinning claims are the same as or differ from those of the cosmology.) Returning to the distinction between knowers and knowing on the one hand and knowledge on the other, LCT is a 'both-and' approach: it recognizes, like other sociological approaches, that what is valorized in individual statements and interactions between conversants stems from and reflects what is valorized in the field and context. In LCT terms, this valorization stems from the *cosmology* or worldview. LCT also recognizes that the legitimation codes underpinning the cosmology may be contested; they are the subject of struggle between actors in the field to determine which codes are dominant.

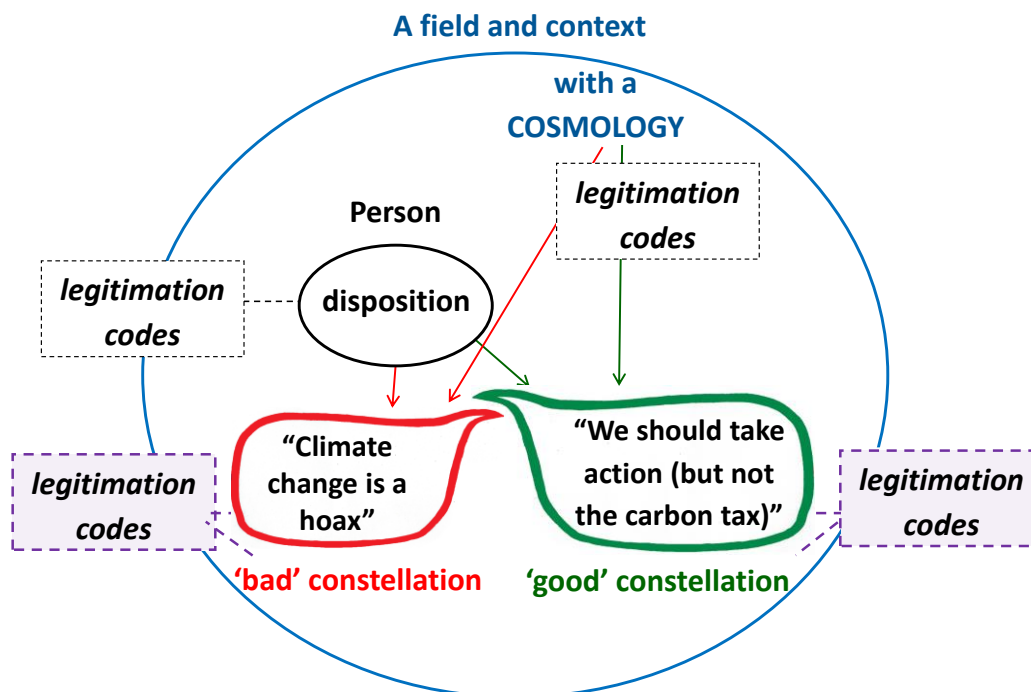


Figure 3.1: Relationships among cosmology, constellations, knowledge claims and legitimation codes, showing a binary constellation. Purple boxes indicate the study's main focus on analyzing the legitimation codes of knowledge claims.



In summary:

- **Constellations** are the arrangements of knowledge claims, here, statements about climate change;
- **Cosmologies** are the worldviews that generate those constellations; and
- **Legitimation codes** are the organizing principles of cosmologies. They show the nature of the cosmologies that generate constellations. In addition, the same or different legitimation codes represent the organizing principles of claim-makers' dispositions and knowledge claims (statements) about climate change.

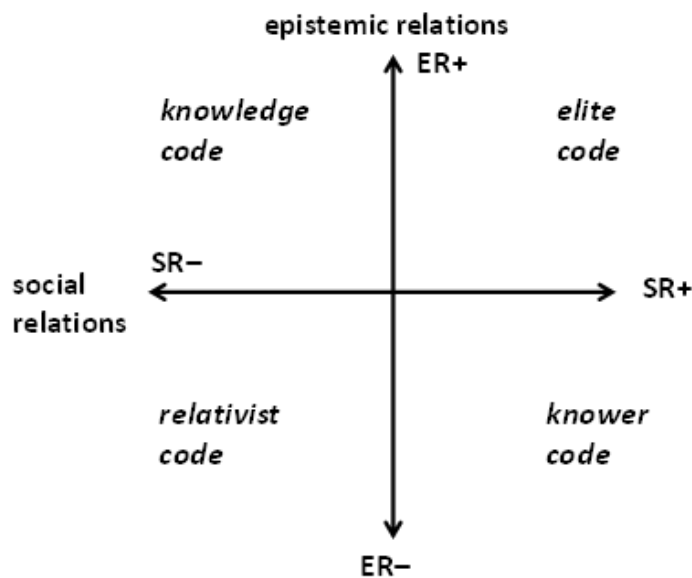
We now turn to the two dimensions of LCT employed in this study, namely *Specialization* and *Semantics*, and their two forms of legitimation codes, *specialization codes* and *semantic codes*, respectively. These two dimensions were employed because the existing literature describes the disjuncture between scientific and lay discourses of climate change, which lends itself to investigation using Specialization. It also describes the disjuncture between complex and abstract explanations of climate change and those that are simple and concrete, which suggests that an investigation of Semantics could be fruitful. The other three dimensions of Autonomy, Density and Temporality were less fully developed at the time of analysis and less applicable or helpful in addressing the study's research questions.

### ***Specialization***

Specialization analyzes the organizing principles of knowledge practices in terms of what makes a knowledge claim special or worthy of distinction or legitimacy (Maton, 2014). It is based on the premise that every knowledge claim is made by someone (the subject) and is about or oriented towards something (the object), and so sets up *epistemic relations* (ER) to objects and *social relations* (SR) to subjects. Each relation may be more strongly (+) or weakly (-) emphasized, and these two strengths together give a 'specialization code'. Any claim to knowledge can be viewed as specialized by its epistemic relations, by its social relations, by both, or by neither. Figure 3.2 outlines the four specialization codes that determine what constitutes a valid knowledge claim, in this case about climate change, in the following ways:

- *knowledge codes* (ER+, SR-): where knowledge with relatively strong explanatory power, such as scientific knowledge, is emphasized as a legitimate basis on which to make claims about climate change (ER+), and the dispositions of knowers (claims makers) are downplayed (SR-);

- *knower codes* (ER–, SR+): in which knowers strongly base their claims on ‘who they are’, on their emotions, worldview identity and experience (including perceived lived experience of climate change), and/or on the opinions of trusted sources whose significance rests on their disposition (SR+). Scientific skills, knowledge and expertise are downplayed (ER–);
- *elite codes* (ER+, SR+): where legitimacy is based on having both specialist knowledge and also being the right kind of knower; and,
- *relativist codes* (ER–, SR–): where legitimacy is seemingly determined neither by specialist knowledge nor by particular dispositions (Maton, 2014).



**Figure 3.2: The specialization plane and codes (Maton, 2014)**

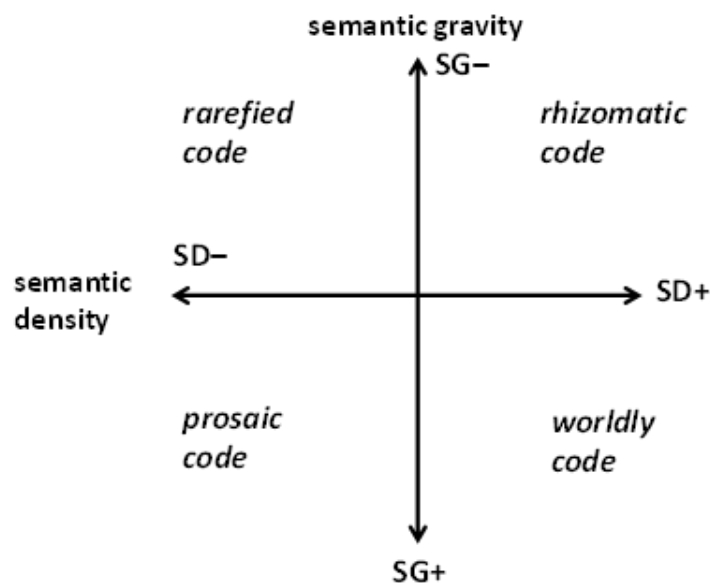
Two of these specialization codes can be illustrated by the contrasting statements introduced in section 2.2. The EEA Trends and Projections statement, which talks about the scientific concepts of greenhouse gas emissions and causality (ER+), with a seeming absence of subjective opinion or emotion (SR–), is underpinned by a knowledge code (ER+, SR–). In contrast, the statement to my son emphasizes moral virtue relating to ‘good’ (catching the train) and ‘bad’ (driving a car), ‘clean’ and ‘dirty’. Although the evidential argument relating to clean air still appears in the background (ER–) it is the moral and the normative that are foregrounded (SR+), signifying a knower code (ER–, SR+).

### **Semantics**

Semantics represents a second set of organizing principles of knowledge practices. It is comprised of two concepts: semantic gravity and semantic density. *Semantic gravity* refers to the context-dependency of knowledge. The stronger the semantic gravity (SG+), the more closely meaning relates to its context: it is more concrete, local or specific, situated in the 'here and now'. The weaker the semantic gravity (SG-), the less meaning is bound to its context: it is more generalized. *Semantic density* (SD) refers to the degree of condensation of meaning, with stronger (SD+) or weaker (SD-) condensation along a continuum. Strengthening semantic density involves condensing a large range of meanings into a concept or knowledge claim, making it complex and multifaceted with a high degree of interconnected meanings. Weakening the semantic density means 'unpacking' or reducing the range of possible meanings of a knowledge claim, thereby making it more simple (Maton, 2014).

The relative strengths of semantic gravity and semantic density together give one of four 'semantic codes', shown in Figure 3.3 and described below (Maton, 2015). These are:

- *rhizomatic codes* (SG-, SD+), where meanings of legitimate practices are relatively context-independent and complex;
- *prosaic codes* (SG+, SD-), where legitimacy is accorded to relatively context-dependent and simpler meanings;
- *worldly codes* (SG+, SD+), where legitimacy is based on relatively context-dependent practices that condense manifold meanings; and
- *rarefied codes* (SG-, SD-), where legitimacy is accorded to relatively context-independent but also relatively simple meanings.



**Figure 3.3: The semantic plane and codes (Maton, 2015)**

Using the same two examples as for Specialization, the EEA Trends and Projections statement deals with global trends and projections into the future that are removed from the immediate ‘here and now’ (SG-) in relation to the abstract and complex concept of greenhouse gas emissions (SD+): a rhizomatic code (SG-, SD+). The statement to my son makes the impacts more simple in terms of ‘clean’ and ‘dirty’ air (SD-), and the impacted parties of ‘us’ and ‘animals’ are more simple, tangible and within everyday experience (SG+): a prosaic code (SG+, SD-).

Having described and illustrated both specialization codes and semantic codes, it is worth reiterating that legitimation codes are not arbitrary divisions into descriptive categories. They are the qualities or properties of statements (knowledge), in that every statement is made by someone in relation to something, and so sets up social relations and epistemic relations. So too every statement has varying degrees of context-dependence and condensation of meaning, thus setting up semantic gravity and semantic density. This is how legitimation codes differ from the descriptive typologies described in Chapter 2, where the basis of division is more or less arbitrary, often made on the basis of the author’s disciplinary viewpoint, so that there are potentially endless ways of ‘cutting the cake’. Legitimation codes provide a universal and systematic way of comparing and contrasting various actors’ dispositions (coding orientations), the statements they make (knowledge claims), and their social contexts. As

described in the following section, it also allows code movement, or change over time, to be analyzed.

***Code match, clash, shift, drift and range***

‘Code match’ is the scenario in which the legitimation codes underpinning one knowledge practice (e.g. government communication of climate policies) are the same as those underpinning another (e.g. think tank commentary on policies). ‘Code clash’ is the scenario in which they differ (Maton, 2014). These concepts are useful for comparing and contrasting knowledge practices. For example, climate science can be characterized by a knowledge code (based on evidence with relatively explanatory power, downplaying subjective experience) and a rhizomatic code (complex, global, abstract meanings). This represents two code clashes with lay audiences that share a knower code (based on personal experiences and trusted sources) and a prosaic code (simple, local, tangible meanings).

‘Code shift’ and ‘code drift’ capture change over time and so are useful for observing knowledge practices as dynamic rather than static. ‘Code shift’ refers to a change in the codes of a knowledge practice or knowers’ dispositions (Maton, 2014). As an example further described in chapter 5, the think tankers sometimes shifted from a knower code, arguing for particular climate change solutions on an ideological basis (SR+) with seemingly little regard to their effectiveness in reducing emissions (ER–), to an elite code, advocating for solutions both on the basis of their effectiveness (ER+) and their congruence with social preferences (SR+). ‘Code drift’ refers to movements across the code plane within one code, such as from a knower code *towards* an elite code (Maton, 2015). Thus, the code planes function as topologies, allowing tracking of drifts across the plane, as well as typologies involving shifts from one code to another.

Finally, ‘code range’ refers to the range of a dimension (e.g. semantic range) expressed in a statement, or in a claim-maker’s disposition (their coding orientation). In this study, coding orientation is chiefly investigated in relation to CCC&E that seeks to expand an audience’s code range, or repertoire of codes. Empirical research suggests that typically, actors who share a knowledge code and a rhizomatic code can shift to a knower code and a prosaic code, but the reverse does not hold for actors whose knowledge practices are underpinned by a knower code and a prosaic code (see Maton, 2014, chapter 6). An implication for CCC&E is that a climate

scientist or policy analyst whose knowledge practices are typically underpinned by a knowledge code (stronger evidence base) and a rhizomatic code (complex and abstract) can potentially communicate in ways that are simple, local, tangible and personally relevant to a lay audience to match their knower code and prosaic code.

### ***The analytic task for this study***

Reconceptualized in LCT terms, the analyses required to address the research questions are as follows:

1. Which specialization codes and semantic codes underpin stated views about climate change? Are particular views clustered together in constellations? On what basis are constellations demarcated?
2. Are observed shifts in content matter and processes of finding common ground underpinned by code shifts or drifts? What patterns can be seen, for example in agreement being associated with movement from one code or constellation to another?
3. Which legitimation codes underpin CCC&E messages, messengers and methods, and therefore which ones match the audience's codes (translation), and which might facilitate the audience's code drift or code shift (transformation)?

## **3.3 Research design**

### **3.3.1 Qualitative research**

A qualitative research paradigm was found to be well suited to the nature of the study. In order to investigate people's views about climate change and how they might be subject to change, the study naturally had several characteristics that suit a qualitative research approach. These include a concern with participant perspectives and meanings, naturalistic research settings, and emergent design in which the shaping of research foci, selection of participants, form and content of focus groups and analysis of data were done in a responsive and adaptive way (Creswell, 2007; Merriam, 2002). More specifically, it became apparent that the study's research questions would be best addressed through qualitative research methods for the reasons outlined below.

Chapter 2 demonstrated that there is currently limited research into knowledge claims about climate change and their underlying structuring or organizing principles, which forms the

central focus of research question 1. As far as possible, and in common with much of the existing research into 'knowers' and 'knowing', the present study sought participants' views as expressed in their own words. In contrast, quantitative methods, particularly surveys with standardized multiple choice answers, tend to reflect the researcher's, rather than the participants', meanings as these become built into the questions and answers. As Whitmarsh (2009, p. 402) puts it:

...the public's interpretation of key concepts and terminology referred to in quantitative surveys should not be assumed to match expert definitions; qualitative research is necessary for exposing the various meanings associated with concepts like 'climate change'.

The research therefore adopted a qualitative approach to identify participants' ways of expressing climate change and differences between groups that might not become apparent through the use of quantitative data collection methods such as surveys, or through employing quantitative analysis methods such as content analysis (searches or word counts of key words). Furthermore, this thesis adopts the social realist positioning of LCT; that is to say, participants' claims are taken to be socially constructed but also 'real' in the sense of having properties and powers of their own. In line with much qualitative research, the 'truth claims' being made in the thesis reflect the researcher's subjective assessments that are informed both by theory and her own life experiences and worldview.

To address research question 2 concerning shifts in people's stated views, one possible approach would be to identify shifts in answers through longitudinal quantitative surveys. However, qualitative research would be required to investigate the nature of shifts and their underlying structure. As an extension of the lack of existing research into the 'what' of people's statements about climate change, there is also little research into the intrinsic features of shifts themselves and of areas of common ground. Analyses of relations between the two, that is, the shifts that might be involved in finding common ground, were not found in the literature. This means that the study had an exploratory purpose that was best suited to qualitative research. A quantitative approach would have been infeasible due to the lack of variables or hypotheses to control or test (Cohen, Manion, & Morrison, 2007).

Research question 3, about contributing to effective climate change communications and engagement (CCC&E), builds on the (qualitative) findings arising from questions 1 and 2. By

their nature, CCC&E approaches such as ‘translation’ and ‘transformation’ and scholars’ recommendations for CCC&E are articulated in qualitative ways as they cannot readily be reduced to quantitative measures. There is therefore a role for the present study to follow suit in providing qualitative descriptions of the additional insights provided by analyzing people’s views and shifts and existing CCC&E efforts, and on that basis provide qualitative recommendations for improving the effectiveness of CCC&E.

### **3.3.2 Case study approach**

A case study approach is characterized by its emphasis on the wholeness of the ‘case’ (the subject of study) and its boundedness from other cases. For example, Merriam (1998, p. 27) describes a case “as a thing, a single entity, a unit around which there are boundaries”. The wholeness of the case refers to its characteristic as an “integrated system”, or “a functioning body” (Stake, 1995, 2005). This study adopted a case study approach because it sought to examine integrated systems within specific boundaries. It adopted a multiple case study approach involving two contrasting cases, being a Rotary group and a group of think tankers. Each case exhibited the essential boundedness of a case study in that it was limited to a small number of participants who shared particular characteristics and who came together for a single event.

Stake (1995) makes the distinction between “intrinsic” case studies, in which the researcher’s purpose is to understand the case itself, and “instrumental” case studies, in which the researcher studies the case in order to develop insights into a wider issue and populations beyond the case. By this definition, the present investigation represents an instrumental case study. It analyzes and theorizes the ways that one group of lay participants (a Rotary club) and another of public policy influencers (think tankers) talk about climate change, in order to gain insight into the ways that other lay people and public policy influencers might talk about climate change.

An important implication of the instrumental case study approach is that the unit of analysis is the *case*, that is, the Rotary or think tank group, rather than individual participants in each case. Because the goal is to theorize about the characteristics of each group in order to generalize to other populations that share similar characteristics, the views of individuals are not of particular interest. The theorized characteristics of the *case* provide portability to generalize



findings to other groups in the population whose knowledge practices are underpinned by the same legitimation codes.

Two cases were selected in part because they provide a useful means of comparing and contrasting, to highlight what the other is not as well as what it is. The original intention was to select one group of lay people and another of public servants involved in climate policy and outreach, but the latter case was changed to think tanks. The rationale for selection of each case and details concerning participant recruitment are provided in section 3.4.

### **3.3.3 Rationale for modified focus groups**

The research interest in interactions between participants pointed to focus groups, rather than individual interviews, as being an appropriate method of data collection. The option of using “naturally occurring data” (Silverman, 2006) was also considered. However, the literature review suggested that transcripts of the types of constructive conversations that this study sought to analyze might not be readily available, namely those in which participants were explicitly asked to consider others’ points of view.

Thus, focus groups were employed for two closely related reasons. The first of these is methodological. The intention was to set up a forum in which constructive dialogue, shifts in views and the finding of common ground might occur amongst participants, to enable observation of these in practice and analysis of their organizing principles. Chapter 2 identified that these elements were not found in the existing literature. The second reason is normative, relating to the study’s social change agenda. Norgaard’s (2011, p. 98) characterization of her Norwegian research setting as lacking “social or political spaces in which [climate change] was considered a relevant or appropriate topic for serious discussion” arguably also applies in Australian society. Thus, the present study was interested in addressing this gap by hosting forums for people to engage in dialogue and consider others’ views about climate change, in the hope that this might also contribute towards meeting the ultimate objective of getting more people taking more substantial action on climate change.

The study adopted the ethos of the “unfocused group” (Mackay, 2012), in which the researcher introduces the topic and then more or less stays out of the conversation in order to capture participants’ own meanings and ways of conversing. In progressing along the spectrum from fixed question and answer surveys to focus groups to unfocused groups, the theory is that

researcher's influence should progressively lessen, thus allowing participants to engage in more 'naturalistic' interactions. This study adopted a mid-way position between focus and unfocused groups, involving some intervention in participants' conversations. As described in section 3.4, the researcher primed the conversations in certain ways and gave explicit instructions to participants in order to encourage constructive dialogue rather than debate and consideration of other points of view. Hence, the format adopted in this study could be described as a 'modified focus group'.

### **3.3.4 Rationale for interviews**

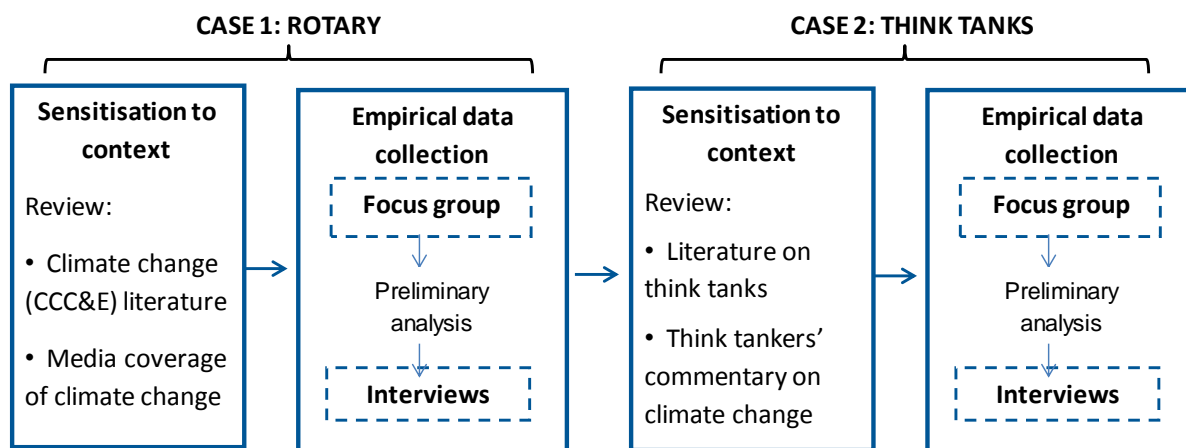
The research design included holding a select number of semi-structured interviews two to three months after each focus group. Initially it was intended that their primary purpose would be to provide data on which to evaluate the effectiveness of the focus groups. In practice, and with a slight change of research focus towards understanding views and their basis rather than designing effective engagement events, the interviews' main function and value lay in providing supplementary data about participants' climate change views and shifts that they described making during or after the focus group.

## **3.4 Data collection**

This section outlines the data collection phases for the Rotary and think tank cases (3.4.1). It then turns to the rationale for participant selection and recruitment, and format of the focus group and interviews for each of the cases, Rotary (3.4.2) and think tanks (3.4.3).

### **3.4.1 Data collection phases**

Figure 3.4 shows the data collection phases for each case, Rotary and think tanks. Empirical data were collected in two main phases (a focus group and interviews), with preparatory research activities and participant recruitment occurring before each phase. As shown in Figure 3.4, data collection for each case occurred separately rather than concurrently so that reflections on the first could inform the design of the second.



**Figure 3.4: Data collection phases for each case study.**

The preparatory activities included reviewing newspaper and radio coverage of the climate change issue in the three months prior to each focus group, in order to sensitize the researcher to the context for each case. For the think tanks, the material reviewed included general literature on think tanks so as to understand how they work. It also included recent media commentary on climate change by the five organizations involved in the research, so as to understand their public positioning on the issue.

In the following two sections, the selection and recruitment of participants, the engagement event ('modified focus group') and follow-up interviews are discussed for each case. The duration of each event was approximately two hours. The events were audio- and video-recorded and the interviews were audio-recorded. All recordings were transcribed in full by the researcher.

### **3.4.2 Case 1: Rotary**

#### ***Participant selection and recruitment***

The first case was intended to represent a group of 'ordinary people' (lay people). The quantitative surveys referred to in chapter 2 suggested that this group could potentially include those who were skeptical about climate change or not engaged in taking action. Such a case was chosen on the premise that it is important to understand more about skeptics' views and how those views might be subject to change. The literature on the social support afforded by groups suggested that working with an existing group would be advantageous. For example, existing groups are more conducive to fostering the "interpersonal and small-group dialogue" that Moser (2007) suggests can start people on the path of sorting through the complex issues

and difficult trade-offs of climate change. For ethical and logistical reasons I sought to recruit only participants who were over 18 years of age and who spoke English fluently. Beyond this the demographics of the group were not important as the study did not seek to correlate demographics with views. However, in the interests of providing further details for those conducting similar research, some details about participants' demographic attributes are noted in the following subsection ('the engagement event').

The literature on focus groups tends towards an ideal group size of between six and ten people, which provides a balance between a potentially greater diversity of views in a larger group and greater intimacy and opportunities to speak in a smaller group (Fern, 2001; Stewart, Shamdasani, & Rook, 2007). In the present study, the goal was to recruit a large group of 12 to 20 people that could be divided into pairs and small groups, to provide a mix of conversation formats. I contacted six community groups, mostly in Western Sydney, whose focus was not on climate change or the environment, and whose websites suggested that they had regular face-to-face meetings. Of these, West Liverpool Rotary Club (hereafter "Rotary") agreed to participate.

### ***The engagement event***

The engagement event, a 'modified focus group', was held on 31 July 2012 during Rotary's weekly club meeting over dinner. Sixteen club members participated. They comprised two women and fourteen men, most of whom were aged over 50 but with an age range from 33 to 80 years (based on the information in returned consent forms, see Appendix B). Participants were not asked about their demographic and psychographic attributes, as they were not a focus of the study, but they were sometimes mentioned in conversation. Some participants self-identified as being one or more of the following: Christian, Liberal Party voter, small business owner (e.g. electrician, plumber, mechanic, accountant).

The event format involved a mix of pairs, small groups, and whole group conversations. The researcher was the main facilitator at the event with her Principal Supervisor (Chris Riedy) acting as a second facilitator to answer any questions in the pairs and small groups.

At the beginning of the event, participants were not aware that climate change was the topic of conversation. The information and consent forms (Appendices A and B) simply referred to

“a current issue of public importance”. The intention was to avoid pre-loading the conversations with anti-climate change sentiment and pre-rehearsed statements (Peavey, 1992; Shenker-Osorio, pers. comm.). Instead, the researcher opened the event by inviting participants to discuss their values and “what draws you to be part of this Rotary group?”, before asking for a continuation of dialogue, not debate, during the main part of the proceedings (Appendix C). As such, the openers were intended as a form of priming to set the tone of the event and the expectation of constructive dialogue.<sup>5</sup>

The conversation then turned to “What is climate change? What does it mean to you?” The second main prompt for conversation was a set of seven cartoons and other images from a range of perspectives. Participants were asked to consider the variety of ways that climate change was expressed in the images, including from perspectives that were supportive and dismissive of climate change. Images were chosen on the basis that visual representations of climate change are a key means by which the issue can be rendered more concrete (Smith & Joffe, 2012). Also, the humor of the cartoons was intended to act as a social lubricant.

Participants wrote comments on three “conversation maps”, one for each small group. They were asked to capture the main themes of the conversations in their own words. In practice they did not use the maps in this sort of summarizing and condensing way but rather to record their judgments, both positive and negative, of various aspects of the climate change issue. The maps provided a useful function in that some of the participants who rarely spoke during the event did record some comments on the maps. Both speech and conversation map entries are analyzed and reported in this study.

Unlike a typical focus group format, the researcher asked only a few general questions and then left the participants in their pairs or small groups, meaning that most of the questioning and answering was done by participants themselves. Many of these conversations were only heard by the researcher on the audio-recordings or read on the maps after the event.

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<sup>5</sup> It is interesting to note van Prooijen and Sparks’ (2014) findings, which post-date the event, that priming with values may help people to accept the challenging concepts of climate change and climate responses that conflict with their existing beliefs and sense of self.

### ***Interviews***

At the end of the event, a request for interviewees resulted in nominations from four participants. As it turned out, only three were interviewed because the fourth had left the club and was uncontactable. Three interviewees was considered sufficient as the interviews were not intended to be representative of the group but to provide insights into interviewees' experiences and further richness to the views already expressed. The interviewees came from each of the three small groups at the event, and so covered many of the conversations and views discussed at the event.

The interviews were held approximately three months after the event, at the office of one of the interviewees. The interviews were semi-structured with the question guide reproduced in Appendix D. Questions included asking interviewees to share their experiences of the event, including whether they had been introduced to any new ways of thinking about climate change. They were also asked about their preferred sources of information about climate change.

### **3.4.3 Case 2: Think tanks**

#### ***Participant selection and recruitment***

The second case was intended to provide a contrast to the first, so that differences in knowledge claims and practices would become more readily apparent in comparing the two. Think tanks were chosen on the basis of their considerable influence in shaping public discourse at a national level, both directly through their own publications and media appearances and indirectly by influencing those in power (McCright and Dunlap, 2011; McKewon, 2012). Thus, West Liverpool Rotarians and public policy influencers such as think tanks tend towards opposite ends of a power spectrum. Within the broader research agenda interested in the contours of the public debate, understanding think tankers and their stances seemed an important contribution.

In contrast to the Rotary case, the selection of individual think tankers mattered. They were invited on the basis of their affiliations with organizations from across the political spectrum, in order to represent a range of views, and on the basis of their profiles as climate change policy

analysts or commentators. Five think tankers from the following organizations agreed to participate:<sup>6</sup>

- David Hetherington, Per Capita
- John Connor, The Climate Institute
- Miriam Lyons, Center for Policy Development
- Sam Roggeveen, The Lowy Institute for International Policy
- Tim Wilson, Institute of Public Affairs.

### ***The think tank roundtable***

The roundtable was an invitation-only event held on 10 December 2012 at the researcher's university (University of Technology Sydney), which was intended to be neutral ground for the think tankers. In an initial conversation some months beforehand, one of the participants had requested that the roundtable operate by the Chatham House rule. However, reporting on conversations with so few participants, each with a distinct stance, would have compromised participants' anonymity. In the end, all participants agreed to have their names reported. The researcher facilitated the roundtable; her Principal Supervisor Chris Riedy took photographs and video-recordings but did not participate in the roundtable.

At the start of the roundtable, the researcher primed the conversation by saying that the intention was "dialogue, not debate". The format and questions of the roundtable (Appendix G) necessarily differed from those of the Rotary event. The roundtable sought to identify the think tankers' stances from first principles, with the opening questions: "Do you agree that we need to live sustainably on the planet? What do you mean by sustainably, what conditions would need to be met?" The conversation then turned to climate change, the scale and speed of responses required and their compatibility or otherwise with participants' political ideologies. In the final stages of the roundtable, participants were asked to identify any areas of common ground that they had found.

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<sup>6</sup> Two participants, Miriam Lyons and Tim Wilson, have since left their respective think tanks. The Centre for Independent Studies and The Australia Institute were also invited to participate but declined.

### ***Interviews***

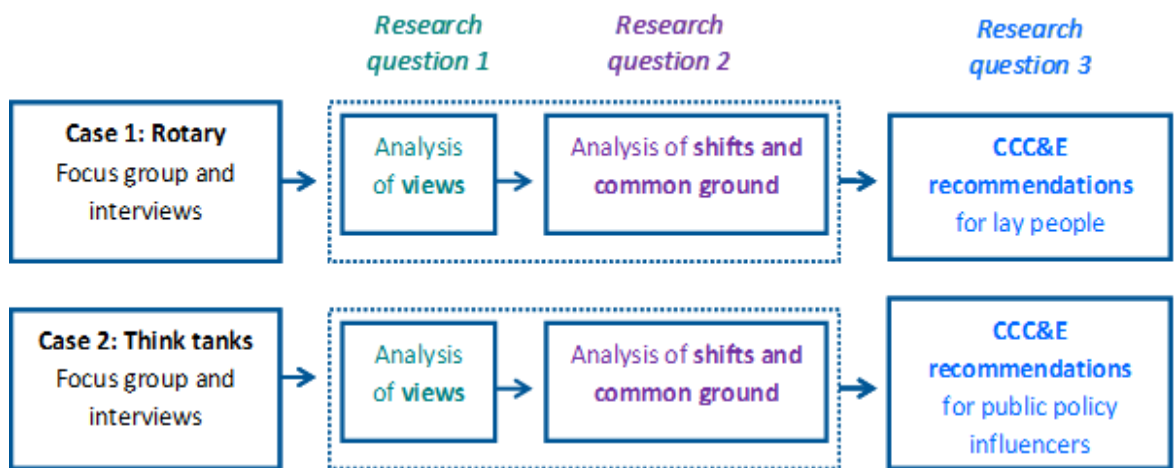
In the roundtable recruitment stage and again at the end of the roundtable, all five participants were requested to participate in a follow-up interview. Four of the five agreed to be interviewed, with no response from the fifth (David). Interviews were held two to two-and-a-half months after the event. Participants were asked about their experiences of the event and what they learnt from it, as well as their thoughts on the way forward in the climate change debate (Appendix H).

### **3.5 Data analysis**

Figure 3.5 provides an overview of the data analysis phases and their relationship to the research questions. Addressing research question 1 on views about climate change and why they differ involved analyzing the legitimation codes and constellations of participants' stated views about climate change. The subsequent phase involved analyzing shifts in participants' views through the course of the conversations, and areas of common ground they found, to address research question 2. Together, the insights about views, shifts and common ground formed the basis for the final phase, developing recommendations for CCC&E (research question 3).

The remainder of this section outlines the approaches taken to analyze the legitimation codes (3.5.1) and constellations (3.5.2) of people's views about climate change, followed by the analysis of shifting views and common ground (3.5.3).





**Figure 3.5: Data analysis phases and relationship to research questions.**

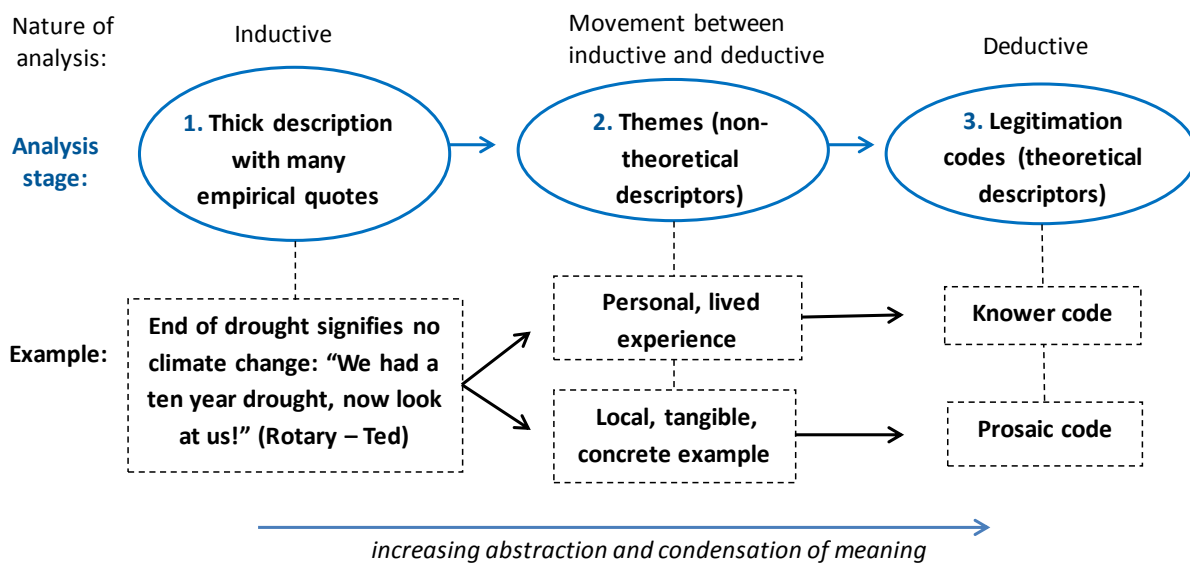
### 3.5.1 Analysis of legitimization codes

In this study, three stages of analysis were carried out to identify the legitimization codes underpinning participants' statements about climate change. Figure 3.6 shows the progression through the stages, involving shifts from 'thick description' in which participants' quotes were foregrounded (stage 1), to thematizing the thick descriptions in non-theoretical terms (stage 2), to analyzing legitimization codes (stage 3). Each stage involved writing a summary document of the findings, as the platform for proceeding to the next stage.

The purpose of the three-stage process is to rise out of the specificities of what individual participants said, to theorize about the organizing principles or legitimization codes of their statements. The process enabled this in ways that reached the abstraction and generalization of the theoretical (LCT) concepts while doing justice to the richness and nuances of the data.

As Maton and Chen (2015) put it:

... the analytic methodology of LCT ... involves immersion in *both* theory *and* data. ...It enables both 'thick description' and thick explanation, both empirical fidelity and explanatory power.



**Figure 3.6: A three-stage process for analyzing legitimization codes.**

**Stage 1** began with line-by-line analysis of each event and interview transcript. This was an inductive process, whereby the researcher’s preconceptions based on awareness of the literature and LCT were put to one side as far as possible. Quotes that dealt with similar content matter were brought together into categories. In the example provided in Figure 3.6, a number of quotes such as Ted’s constituted a category named ‘end of drought signifies climate change is not occurring’.

This stage involved a long period of immersion in the data, aimed at ‘letting the data speak’ (Maton & Chen, 2015). The LCT concepts were put to one side to avoid ‘peppering’ the data with theoretical terms at every turn as a symptom of rushing from data to theorization without undertaking the necessary intermediate steps of description (stage 1) and thematization (stage 2). In stage 1, the individual participants and what they said were foregrounded. For each case study, the output of this stage was a summary document rich in ‘thick description’ (Lincoln & Guba, 1985) with many direct quotes from participants.

**Stage 2** involved moving between inductive and deductive processes. The ‘thick descriptions’ identified in stage 1 were grouped into themes (inductive), but the selection of themes was made with one eye to their legitimization codes (deductive). While staying true to the nature of the empirical quotes, the two themes of “lived experience” and “local, tangible, concrete” (Figure 3.6) were also developed with an awareness that LCT could provide a means of

characterizing such themes in terms of who or what makes them special or valid (specialization codes) and how context dependent and complex they are (semantic codes). Nonetheless, in stage 2, the themes are expressed descriptively in non-theoretical terms and the LCT concepts appear only implicitly in the focus of themes.

The summary document of stage 2 findings for each case study was organized by theme, rather than by climate change subject matter as in stage 1. Cases that appeared not to fit the themes (disconfirming cases) were noted for analysis in Stage 3 in light of the theoretical concepts.

In **stage 3** the empirical findings are explicitly characterized in theoretical (LCT) terms, with a select number of quotes used only as illustrative examples. Expressing findings in terms of their legitimation codes represents the culmination of increasing abstraction and condensation of meaning from stages 1 to 3. For example in Figure 3.6, the term “knower code” brings together all the quotes and themes relating to lived experience and also related quotes and themes from this study, as well as bringing with it other meanings and implications from the growing body of LCT research. Identifying that statements are underpinned by a knower code, for example, has important implications for the design of CCC&E (chapters 7 and 8).

Stage 3 involved deep immersion in the theory. While a general awareness of the LCT dimensions of Specialization and Semantics informed the stage 2 themes, stage 3 required a thorough understanding of these concepts in order to identify which legitimation codes underpinned each theme. In this vein, the apparently disconfirming cases identified in stage 2 were re-examined in stage 3 in light of the theory. This process revealed some cases that were in fact disconfirming and others that on closer inspection were different expressions of the dominant legitimation codes (see chapter 4 for examples).

The major outputs of stage 3 are chapters 4 to 6 of this thesis. Each chapter sets out by largely retaining the thematic headings of stage 2, and then demonstrates how these themes are underpinned by particular legitimation codes, for example in “lived experience” being underpinned by a knower code.

### **3.5.2 Analysis of constellations**

As described in 3.2.1, constellations are arrangements of stances that shape what is viewed as legitimate within a field – in this study, the arrangements of climate change views (knowledge

claims). Constellations were identified through an inductive process that differed slightly for each case because of their different characteristics. During the Rotary event it became clear that participants were positively or negatively evaluating aspects of climate change and climate change solutions, which suggested two constellations. It was then a relatively simple task to list each positively or negatively evaluated concept in a column marked 'good' or 'bad', to represent each constellation.

In contrast, listing the think tankers' positively and negatively evaluated solutions in two columns produced two lists of internally contradictory statements. The contradictions reflected their different political ideologies (in fact the basis of their selection as research participants), meaning that unlike the Rotary group, the think tankers could not be considered as a relatively homogeneous group. Instead, what was needed was a way of recognizing the differences. As a first step, I noted each time the conversation arrived at a point of agreement or disagreement about a climate solution and noted the position taken by each of the five participants, in five columns. This showed what the points of agreement and disagreement hinged upon, namely the level of government intervention. Further, this process showed the major divisions between participants in that three tended to support intervention (one constellation), one to oppose it (a second constellation), and the other to either support limited intervention (a third constellation) or to shift between the other two depending on the context. Thus the final step of analysis was to replace the names with the descriptive basis (level of intervention) on which each of the three constellations was demarcated. The think tankers also found some areas of common ground that could fit across two or more constellations, and so for these concepts the demarcation lines were erased.

Tables depicting the Rotary and think tank constellations are provided in sections 4.5 and 6.2, respectively.

### **3.5.3 Analysis of shifts and common ground**

Having identified the legitimation codes and constellations, further analyses became possible. During the process of addressing research question 1 on views about climate change and why they differ, several shifts in views and areas of common ground were noted and returned to in a second phase of analysis, in order to address research question 2. The legitimation codes and constellations associated with shifting views and finding common ground were identified, particularly those that involved a shift from rejecting to accepting climate change and/or

solutions. This enabled an analysis of whether the shifts in statements involved code shifts or constellation shifts, for example from a code clash to a code match, or from the 'bad' to 'good' constellation. Together, understanding the codes and constellations of views, shifts and common ground provided the foundations for the development of CCC&E recommendations, to address research question 3.

### **3.6 Ethical considerations**

A number of measures were employed to ensure that the research would be of benefit to participants and others and conducted in an ethical manner. Firstly, prior to contacting potential participants I obtained an ethics approval from my host institution, the University of Technology Sydney (UTS). In accordance with the approval, each participant in the study was given an information form that detailed the purpose of the study and what their involvement would entail, as well as their rights to participate voluntarily and to withdraw at any time. Each participant also signed a consent form prior to the commencement of the engagement event and for those who elected to be interviewed, another consent form prior to the interviews. Samples of the information and consent forms are provided in Appendices A, B, E and F. In addition, at the beginning of each engagement event and interview I verbally alerted participants to the fact that they could choose to opt out of any conversations and could withdraw from the study at any time without giving a reason. The information forms also provided an independent avenue for feedback or complaints, being the UTS Ethics Office. The consent forms gave participants the choice of having their names reported or replaced with a pseudonym, recognizing that a default position of anonymization might go against participants' desires to be recognized for their contributions and their points of view. As it turned out, every participant in both the Rotary and think tank groups opted to be referred to by name in reporting.

Secondly, ethical considerations extended beyond the formal engagement processes. I invited the Rotary participants to contact me at any time after the event or interviews to discuss their experiences or concerns. I also offered to assist them in pursuing any activities that were initiated as a result of the event (for example to engage other Rotary groups in a similar process) and to assist the think tankers who raised the possibility of running a climate science education event. In the end my offers were not taken up.

Thirdly, the engagement events were intended to be interesting and worthwhile for participants. Feedback from interviewees suggests that this was the case, at least for those participants. For example, one of the Rotarians said the event had been a catalyst for club members to get to know each other better and to find more constructive ways to deal with conflict in club affairs more generally. Another said that the event had prompted a personal revelation that while he was opposed to the carbon tax, he was supportive of other climate change responses and that up to that point he had conflated the two. One of the think tankers commented that the event had been useful for understanding her peers' thinking on climate change. According to others it was a catalyst to "do more on climate change" and provided a range of ideas for further engaging their peers.

More broadly, with the publication of this thesis and other research artifacts the research should benefit the research community and beyond through its contributions to knowledge outlined in chapters 1 and 9. The study sheds new light on views about climate change in ways that complement existing research, and makes practical recommendations for CCC&E to contribute towards society's responses to climate change.

### **3.7 Quality of research**

The research employed a number of measures by which qualitative researchers seek to ensure the quality of their research, as recommended by Creswell (2007), Lincoln & Guba (1985), Patton (2002) and Miles and Huberman (1994). These measures are detailed below.

**Methodical analysis** (Patton, 2002): The rigorous and methodical data analysis process began with the researcher's transcription and coding of every line of speech from the engagement events and interviews. Stage 1 involved a long period of immersion in the data, aimed at ensuring that findings were grounded in the data, thus avoiding the "rush to theorize" (Denzin & Lincoln, 2005, p. 209). Stage 2 involved moving methodically between the data and the theory, between inductive and deductive coding, to identify themes that related to LCT concepts. Only then was Stage 3 commenced. Writing up each stage for supervisor review ensured that the researcher carried out the analysis of each case study stage by stage without jumping ahead. It also provided a formal pause point for the researcher to reflect on the implications of each stage's findings for the next stage.

**‘Thick description’** refers to the description of a phenomenon in sufficient detail for the reader to evaluate the extent to which the conclusions drawn are transferable to other times, settings, situations, and people (Lincoln and Guba, 1985). In chapters 4 to 6 of this thesis, descriptive text and direct quotes from participants are provided in the early parts of each chapter before introducing the theoretical analyses and conclusions. This allows the reader to see if he or she comes to the same conclusions as presented in the thesis.

**Triangulation** is described in some qualitative research texts as a method for corroborating findings by combining multiple data sources to arrive at one definitive ‘truth’ (e.g. Patton, 2002). However, in an alternative sense as employed in the present study, multiple data sources were examined not to corroborate findings but to ensure that the researcher was aware of the research context and could produce a rich and comprehensive account. For example, the preliminary media reviews provided useful context prior to each event, and think tankers’ own publications showed the contrast between what they said in the roundtable and in public discourse. Thus, the use of these extra sources strengthened the research findings, by revealing difference rather than confirming one truth.

**Analysis of disconfirming cases:** As mentioned in section 3.5.1, participant statements that appeared to exhibit a different or ‘disconfirming’ legitimation code to others in the group were identified and analyzed in detail. This process strengthened the research findings, in that disconfirming cases enriched the range of examples demonstrating variation in the expression of particular codes. For example, some cases that at first glance appeared to exhibit a code clash because of the subject matter were shown to actually represent a code match. Other disconfirming cases were in fact different and represented a code clash with the dominant codes of the group. Their effects in being treated as a glitch or error by other participants were useful to articulate as they highlighted the importance of the codes. The analyses of disconfirming (and apparently disconfirming) cases strengthened the quality of the research in accounting for all cases.

**Generalizability through theory:** This quality measure addresses a misconception that it is not possible to generalize from a single case. As described in section 3.3.2, the purpose of an instrumental case study is to extend findings from the case to a broader population. In the present study, findings from each case (Rotary and think tanks) were generalized to broader

populations that are likely to share the same legitimation codes. This was made possible by the theory employed. As Johnson and Christensen (2004, p. 19) state, “A well-developed theory explains how something operates in general ... and it enables one to move beyond the findings of any single research study”. LCT is one such theory: its ability to identify the organizing principles (legitimation codes) of knowledge practices rather than only their surface features enables portability of findings to other knowledge practices and audiences that share the same codes.

Notwithstanding the ability to generalize that is afforded by theory, care has been taken in generalizing or ‘extrapolating’ findings, as recommended by Patton (2002), and in **acknowledging the limitations of the research** (Patton, 2002) (see section 9.4). For example, care has been taken to note that the study’s recommendations for CCC&E are provisional and should be the starting point for further empirical research in a number of areas.

**Reflexivity:** I kept a research journal throughout the course of the research. In the early stages, the focus was on acknowledging and reflecting on my stance, biases and normative goals for the research. Later the focus turned to the decisions about the research design, and towards the end, to reflect on research findings. Prior to the engagement events I recognized that research participants were likely to have very different views to my own, and during each event and interview I attempted to put my views to one side in order to hear participants’ points of view.

An **audit trail** is a description of the steps taken from the start of a research project to the development and reporting of findings, and includes the rationale for research design, data collection and analysis decisions (Lincoln and Guba, 1985). In the present study, such aspects of the audit trail were recorded and discussed with supervisors and they are reported in sections 3.3 to 3.5 of the thesis. An **external audit** involves having a researcher not involved in the research process examine both the process and product of the research study, in order to evaluate the extent to which the findings, interpretations and conclusions are supported by the data (Creswell, 2007). In relation to the present study, three PhD examiners with no connection to the study constitute its external auditors.



The literature suggests a number of other quality assurance procedures that were considered but not adopted in this study. One of these is “member checking”, the practice of inviting research participants to review and suggest corrections to the researcher’s reporting and interpretation of participants’ statements. As pointed out by Silverman (2006), while member checking gives the impression of empirical fidelity and pursuit of the ‘truth’, in reality it does not prove that one version of events is correct and the other is not. Rather, they are versions of different things at different times. The report presented to participants for member checking is a new and different prompt to those presented in the events and interviews, in a new and different context, some months or years later. The practice of member checking was not adopted in this study on the principle that the more one intervenes by providing new and different materials for participants to review, the more one changes what is being observed.

### **3.8 CONCLUSION**

This chapter has detailed the theoretical framework and methodology of the study. It began by outlining the task for the study, based on the research purpose and questions as well as the limitations and implications of the literature identified in chapter 2 (3.2). Legitimation Code Theory (LCT) was adopted as a theoretical framework capable of fulfilling the requirements of the task, namely to analyze the organizing principles of knowledge practices. The study analyzed the specialization codes, semantic codes and constellations of participants’ stated views about climate change as well as employing the related concepts of code match, code clash, code drift and code shift in making suggestions for CCC&E.

A qualitative research paradigm was found to be well suited to the study’s exploratory nature and interest in participant perspectives (3.3). The research constituted an instrumental case study, which enabled extension of the findings to populations beyond the case. Two contrasting cases were selected, a Rotary club and a group of think tankers, to represent differing levels of power and influence and potentially differing ways of knowing about climate change. Each group participated in an engagement event, a ‘modified focus group’, that encouraged participants to express their views about climate change with minimal prompting from the researcher. Follow-up interviews two to three months later with a few participants from each group further enriched the data with participants’ experiences of the event and further exploration of their views (3.4).

Data analysis involved two distinct but complementary processes of analyzing legitimation codes and constellations (3.5). The code analysis was carried out in three stages, progressing from ‘thick description’ in which participants’ quotes were foregrounded (stage 1), to thematizing the thick descriptions in non-theoretical terms (stage 2), to analyzing legitimation codes (stage 3). Constellations were identified by observing the ways in which participants tended to group together concepts that they evaluated positively or negatively. The final phase of data analysis involved analyzing shifts in participants’ views and common ground that they found.

In terms of ethics, a number of measures were employed to ensure that participants were well informed about the nature of the research and their involvement in it, and their rights, including the ability to withdraw from the research at any time (3.6). Consideration was also given to ensuring that the research would be of potential benefit to participants, researchers and beyond. The quality of the research was enhanced through a range of measures including ‘thick description’ of the empirical data, analysis of disconfirming cases, and generalizability through theory (3.7).

The theoretical framework and methodology adopted in the study have two related implications for the purpose, form and content of chapters 4 to 6 that report the case study findings. Firstly, the study sought to theorize across cases by providing an integrated theoretical explanation. The primary method of doing this was to identify the legitimation codes (i.e. organizing principles) of statements about climate change, rather than (only) the content matter about climate change, or other many and varied surface features. As a result, the reporting of findings in chapters 4 to 6 is organized by LCT-related themes rather than on climate-change related subject matter. Secondly, adoption of an instrumental case study approach means that the unit of analysis is the case, that is the Rotary or think tank group, rather than individual participants. Individuals together constitute a case but they are not cases in themselves. This means that chapters 4 to 6 foreground the LCT-related themes, with individual quotes becoming illustrative examples of those themes.

In sum, this chapter set out the approaches taken to ensure that data collection, analysis and reporting were done in ways that were capable of addressing the research questions, theoretically coherent, ethical, and of high quality. In the following chapters, the analyses of

the modified focus groups and interviews are reported in chapter 4 for the Rotary group and chapters 5 and 6 for think tanks. Given the portability afforded by the theory, chapters 7 and 8 apply the study findings to make recommendations for CCC&E for lay audiences and public policy influencers.

## CHAPTER 4: ROTARY CONVERSATIONS ABOUT CLIMATE CHANGE

### 4.1 INTRODUCTION

This chapter reports on the event and interviews conducted for this research with members of West Liverpool Rotary Club, Sydney. As described in chapter 3, sixteen people participated in the engagement event, a ‘modified focus group’, held in July 2011. Three participants were interviewed three months afterwards to ask about their reactions to the event and to follow up on concepts raised during the event.<sup>7</sup>

This chapter analyzes the participants’ conversations about climate change in the event and interviews. It examines how participants constructed climate change and analyzes the basis for those constructions in terms of their legitimation codes (research question 1). It also examines the basis for participants’ apparent shifts between construing anthropogenic climate change as a “hoax” and as a real problem that is worthy of action (research question 2). These analyses contribute towards the research aim of explaining the basis for differences among participants in the climate change debate and understanding how these differences might be subject to change.

The body of each section describes what participants said about particular aspects of climate change, using non-theoretical descriptive themes (see section 3.5, data analysis). The discussion part of each section then provides the explanatory scaffolding required to reach the theoretical legitimation codes from the empirical themes. The following two sections of this chapter cover the climate change problem, both in terms of physical climate change and the climate change debate (4.2), and climate change solutions (4.3). They describe participants’ statements about these aspects of climate change and analyze their legitimation codes. Section 4.4 looks at the basis on which participants say they form their views about climate change, relating to lived experience, profession-based knowledge, personal attributes and trusted sources. It is followed by an analysis of participants’ constellations and the

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<sup>7</sup> A note on names: there were two Jocks and two Joes at the event. To respect participants’ wishes to have their names reported rather than be replaced by a pseudonym, quotes by Jock Gibbs are indicated as (Jock), by Jock Cimino as (Jock C.), by Joe Cauchi as (Joe) and by Joe Cimino as (Joe Cimino).

central role of participants' cosmologies (codes and constellations) in underpinning their talk about climate change (section 4.5).

## **4.2 THE PROBLEM**

This section investigates the ways in which participants constructed the problem represented by climate change. The section describes their constructions of both physical climate change itself in terms of how it is caused and the types of impacts associated with it, and the issue or debate about whether or not anthropogenic climate change exists and is a problem. It then discusses the legitimation codes that underpin these constructions.

As will be seen in the following examples, the concepts that participants talked about tended to fall into two binary groups. The focus was on different people or parties who were said to be responsible for causing and therefore responding to climate change. In general participants tended to pass judgment on aspects of the climate change issue on an axiological (value-based) rather than evidential basis, and they tended to be silent on or to dismiss climate science. The things they talked about were simple, local, concrete and context-dependent.

### **4.2.1 Physical climate change**

Participants used the term "climate change" to describe both the natural and cyclical type of climate change associated with ice ages and warm periods, as well as the more recent human-induced (anthropogenic) climate change. While natural, cyclical climate change seemed to be universally accepted, most participants downplayed the seriousness or even disputed the existence of anthropogenic climate change. Participants used a range of signals to make clear which of the two meanings they were talking about:

- they emphasized the length of time over which natural climate change has been happening and is still happening, e.g. "climate change has been happening for millions and millions of years" (Ted), compared with current or future anthropogenic climate change;
- natural climate change was neutrally evaluated as something that just happens, while anthropogenic climate change was negatively judged as a "hoax" or alternatively as a problem that requires action;
- often in relation to anthropogenic climate change and never in relation to natural climate change, participants spoke of "views", "opinions", "I think", and discussed who is responsible for causing climate change and should take action to address it.

Thus, participants tended to construct anthropogenic climate change as being about people's roles and responsibilities rather than the domain of climate science with its concepts of causation and effect and measurable changes. They also described it in terms of simple and concrete entities situated in the present. These two features of their conversations – focusing on agents' roles and responsibilities, and simple, concrete things in the present – are further explored below.

### ***Agents' roles and responsibilities***

Rather than focusing on climate science, many of the conversations were about the roles of various parties in causing climate change. One feature of these conversations was a focus on *agency*, that is, which agents (people and otherwise) have the capacity to influence the climate, to create change of that scale, and to reverse such large scale changes.

Participants expressed a range of views on the extent to which people have agency to both cause and fix climate change. For example, a few participants acknowledged the human-induced component of climate change:

If you look at historically, millions and millions of years ago, [climate change] is exactly the same as what's happening now, the only difference is that it's the human occupation on Earth that's accelerating it at a bigger rate (Louise).

Another participant conceded that air pollution "could be a factor that accelerates climate change", but said that it's a minor part compared with the Earth's cyclical changes: "there's pollution, much more than there ever was in the other ice ages and so on, but I think it's a minor part of it?" (Geoff).

Those who talked about God rejected the idea that humans are able to influence the climate: "everything is in God's hands, and now we are having a lot of rain, a lot of water [after the drought]. So I don't believe this is climate change" (John); "We got no control on climate change, no matter what they tell us. If we, if we take off most of the carbon which we'll spend millions and billions we still won't have only a drop in an ocean" (Joe); and "we can't help, we can't control, we're just humans" (Jock C.). These participants painted a world comprised of impotent humans and an omnipotent God. In short, while there were a range of positions on

the topic of who or what is capable of changing the climate, many of these were concerned with the agency of different kinds of people or agents (including God), rather than scientific concepts about physical mechanisms of causation.

In addition, there was a repeating conversational pattern of participants establishing:

**(A)** whether or not (human-induced) climate change is happening and is a big problem or is likely to become one soon; and

**(B)** if it does pose a problem, that they are either addressing it or they have a good reason not to, so as to maintain positive judgments of themselves as good citizens. This seemed to reference an unspoken 'if-then' moral rule, that 'if there's a problem and we caused it, then we should fix it'.

The following extract illustrates how this pattern played out in an early conversation between three of the participants:

1 David: Isn't the earth hotter, it's like a greenhouse?

2 Joe: Yeah but it's,

3 Jock: Can I ask, can I ask one question? Is the Earth getting closer to the sun or not. I think it is, yeah. I mean that's that's the scientific, finding isn't it, the Earth is getting closer to the sun. So if it's getting closer to the sun should the climate change?

4 Joe: I mean that's 20,000 or how, how long ago was the last ice age? The Earth was icy, right?

5 Jock: Yeah.

6 Joe: And it's only happened because it got closer to the sun. And that's how it got warm.

7 Jock: I think it was because some bloke farted.

8 Joe: Hey?

9 Jock: (hmph half laugh)

10 Joe: Yeah, or something happened that is beyond our control! And what's happening is still beyond our control. We might stop one degree every bloody half a million years that's about it.

The opening question suggests that the conversation might be about climate science. However it seems that Joe and Jock (and perhaps David) were not really concerned with the mechanics

of climate change but the implications for what is required or expected of club members as good citizens. Again, the emphasis is on people's agency and responsibility. David's opening question could be interpreted as supporting the human-induced version of climate change (A), something that Joe and Jock immediately set about dispelling. Jock's "because some bloke farted" joke in turn 7 could have served to build up rapport with the others. It also provided something to align around, signalling that the actual mechanism of causation was not the point of the conversation. Joe picked up this theme in turn 10, suggesting that it does not really matter what is causing climate change as long as they could agree that it does not require their action. Climate change being "beyond our control" provides a sound justification for not acting (B). In sum, participants' arguments were in service of establishing (B), that they are justified in not acting, rather than being about the science. As found in other studies (e.g. Hulme, 2009), what initially looks to be a conversation about climate science turns out to be about people's lack of agency and responsibility and a device for "justify(ing) behaviour, or lack thereof" (Capstick & Pidgeon, 2014). As we will see in the Discussion (4.2.3), the new insight gained through LCT analysis is not that these statements are really about personal agency and responsibility, but that agency, responsibility, and a host of other features of the conversations (alignment with favored politicians and media hosts, rejection of climate science and scientists) are linked together and underpinned by the same legitimation codes.

To the extent that most participants at some stage conceded that anthropogenic climate change does exist, talk soon turned to which countries were causing it and therefore who was responsible for fixing it. In this way countries were treated like individual people, some of whom are 'good' for being 'clean' and others who are 'bad' because they are 'dirty' and are evading their duty to clean up. Australia was said to be "the cleanest country in the world" (Joe) while China and India were jointly named as "the worst polluters in the world" (Ted) and thereby the most culpable for causing climate change. In these statements, there is no mention of emissions or relative contributions from the various countries. The judgments appear to be made on an axiological (good 'us' and bad 'them') rather than an evidential basis.

### ***Simple, concrete, present***

In general, participants reduced factors of climate change causation and impacts to simple and concrete concepts. For example, alternative explanations for recent climatic changes included that they have been caused by solar cycles (David), the Earth getting closer to the sun (Jock),



or a change in the Earth's axis as a result of mining magnetic materials (Alan). Each of these single factors was implied to account for climate change in its entirety. As such, these are much simplified, less abstract, more concrete causation factors than the myriad of interconnected climate change factors and processes accounted for by climate science.

Most participants suggested that the impacts of anthropogenic climate change – if it were happening – would be manifested as higher temperatures and less rain/more drought. Conditions in which temperature stayed the same or drought ended were said to prove that (anthropogenic) climate change was not happening, as in statements such as “in the desert ...nothing's changed really, it's still hot in the day, freezing at night” (Alan) and “We had a ten year drought, now look at us!” (Ted). Another participant described three points in time at which he had observed Lake Eyre to be wet (50 years ago), dry (10 years ago) and again wet (2 years ago), as evidence that anthropogenic climate change does not exist. This represents two levels of strengthening the context dependency of the concepts (semantic gravity) and weakening their complexity and interconnectedness with other concepts (semantic density):

1. translation of the scientific concept of anthropogenic climate change into a one-dimensional 'climate change equals drought';
2. translation of 'climate change equals drought' into the specific instances of what someone saw over three time periods at one particular place.

In the above examples about deserts being the same, the end of the drought and a lake refilling, the complex and abstract concept of climate that involves trends and variability over time was reduced to the simple concept of weather and drought conditions that are directly perceptible in the present at a particular place. This local, personal account is quite different from the complex nature of climate change that can result in extremes of weather rather than just hotter and drier conditions, and impacts that vary around the globe.

Another characteristic of participants' conversations was their concern with impacts that are felt in the present by current generations. They tended to dismiss or downplay the importance of impacts in the distant future. At some stage during the event, most participants suggested that (anthropogenic) climate change might be a real phenomenon but not one that is likely to be too problematic, or at least not in the near future for current generations. In general, climate change was characterized as being slow and mild: it is a “long-term process” that won't happen

“overnight” (Ted), and it is progressing more slowly and with less severe impacts than predicted: “I don’t know whether it’s at the pace that people think it’s happening” (David). Climate change might become more apparent and more problematic in the future, for example, timeframes mentioned by participants were 50, 60, 100, 200, 1000 and 2000 years.

As such, climate change impacts were projected into the distant future and were dismissed as being not worthy of concern or attention because they would not affect ‘me and mine’. Examples of these sentiments included: “Hey by the time they sort it out I’m going to be dead, I don’t give a shit, right?” (Geoff); “Well I reckon the same thing too I, hmm.. not going to help me” (Alan); “Somebody else’s problem” (Alvan). They are based on concern for the present, the tangible and the certain: concrete, directly-perceptible things that participants could experience for themselves, rather than uncertain and intangible projections into the future that rely on abstract modelling.

In another example of the emphasis on things that are simple, visible and situated in the present, participants used the term “pollution” to mean particulates, smog, smoky car exhausts and the “dark green cloud” over China rather than invisible greenhouse gas emissions. Based on these measures, Australia is indeed “clean” and China and India are “dirty”. The opposite story would emerge on the basis of greenhouse gas emissions per capita, which is a more complex, less tangible concept. Also, participants’ account was a current, ahistoric one that did not take into account Australia’s high cumulative emissions<sup>8</sup>, again a more complex concept that deals with an expanse of time rather than the here and now.

#### **4.2.2 The climate change debate**

As per participants’ constructions of physical climate change, their talk about the climate change debate centered on very personal beliefs and opinions rather than on evidential points. They also constructed the issue in a simple, one-dimensional way.

#### ***Beliefs and trusted sources***

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<sup>8</sup> Cumulative emissions over time are important because greenhouse gases stay in the atmosphere and continue to have a warming effect for up to hundreds of years (IPCC, 2014). Since the Industrial Revolution, Western countries such as Australia with high levels of both current and historical emissions have contributed more to causing (anthropogenic) climate change than China and India.

Participants described climate change in binary terms as being something to believe in or not, or metaphorically as a fence with two sides. People could choose to be on one side of the fence or the other with no in between. For example, “well known skeptic” Richard Muller “jumped the fence” (Shann), and “some people agree and some people don’t” (Alan). There was a sense that people’s views about climate change were a matter of subjective opinion or faith rather than fact: “Climate change, well it’s the big thing at the moment and everybody has an opinion” and “people are entitled to their opinion” (Ted). One participant went so far as to describe climate change as “the new religion” (Shann).

Participants recognized the contested nature of climate change in the public arena: “depending upon who you’re talking to, this scientist says this [about climate change], this politician says that, ah, no one can agree” (Alvan); the “electorate is confused, too much spin from shock jocks” (Shann)<sup>9</sup>; “Opinions are framed in extreme language with violently opposing views which ordinary people are trying with some difficulty to sift the truth. The spin on the issue is designed to fit a particular view” (Alvan). In this way the climate change debate was construed as a duel between two sets of influential people who employed “spin” to persuade ordinary people to join their side.

The Rotary participants positioned themselves as a certain type of person, or knower: one who is savvy and not easily duped. They were at pains to point out that they could see the “hoax” for what it was, and they were not fooled. “They are trying to con us again” but “we don’t believe in it”, “it’s like the year 2000 bug” (Joe). One interviewee said he was a member of the Liberal Party and “I’ve seen how campaigns work in the past” (David), suggesting that he knows a politically-driven campaign when he sees one.

Participants also talked about who they identified with and who they trusted on climate change and other issues, as further described in section 4.4 on participants’ basis for knowing about climate change. The people they trusted, including conservative radio commentators, Liberal politicians and their workplace colleagues, shared various political or other commonalities with participants and so belonged in their in-group (‘us’). In contrast, climate change advocates such as Labor politicians and climate scientists belonged to a ‘them’ group. In particular, participants ascribed them unethical or improper motives in perpetrating the climate change “hoax” for

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<sup>9</sup> “Shock jocks” refers to talk-back radio hosts.

their own ends. It was said that climate change was "invented by the scientists and politicians to scare people" (Jock Cimino); "the government's excuse to introduce a new tax ...that isn't necessary" (Ted); to "stay in power" and in particular for Labor to "attract votes with younger people" (David); "a money-making business" for politicians and scientists (Joe, George); and a means for politicians to leave a legacy ("you know, one Prime Minister brought the GST in, I brought in the carbon tax": David). In turn, the carbon tax was being used to "increase energy prices", to "redistribute wealth", and to "get enough money to fix the buildings and infrastructure" that government agencies had neglected (Shann, Jock, Ted). In short, participants' opinions about climate change tended to match those of trusted sources in the 'us' group while the ideas of those in the 'them' group were rejected.

### ***Simple construction of the issue***

Most participants spoke about the climate change issue or debate in simple, one-dimensional terms. It was framed in binaries of belief or rejection, a hoax or a real problem, with no possibility of gradation or shifting depending on the context.<sup>10</sup> Participants also acknowledged that they tended to simplify the idea of 'climate change' to mean 'carbon tax': "but then again this topic always comes back to the climate tax thing" (Jock). They also recognized that their negative judgment of the carbon tax then colored the way they thought about climate change: "Unfortunately, the words climate change no longer mean climate change, they now mean carbon tax, and it's a negative word" (George).

There was also a sense that the fact that the carbon tax and other responses to climate change are advantageous for some proves that the phenomenon itself is a hoax perpetrated by the benefiting parties. In more general terms it seems that participants did not conceptually separate the ontic (whether climate change exists or not) and the normative (who should respond to it and how). In this simple conception these became one and the same, colored by the fact that at the time of the event the most prominent advocates for climate change belonged in participants' 'them' group.

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<sup>10</sup> Later in the event some participants did make these kinds of context-dependent shifts themselves, as discussed in section 4.5. Their acceptance or rejection of anthropogenic climate change and the need for action depended on the underlying legitimization codes of these constructions.

### 4.2.3 Discussion

Participants' constructions of physical climate change were largely concerned with people and people-like agents, rather than scientific concepts such as mechanisms of causation and climate impacts. Even a question such as "isn't the earth [getting] hotter?" which at first glance could have been emphasizing causation and evidence, became all about people's lack of agency and responsibility for taking action on climate change. Similarly, the assessments of which countries are responsible for causing climate change appear to be made on an axiological (good 'us' and bad 'them') rather than an evidential basis. That participants downplayed the causal factors or mechanics of climate change signifies weaker epistemic relations (ER-). In their focus on people, agency and responsibility the participants emphasized social relations (SR+). In summary, considerations of who can and should take action on climate change were more important than the factual accuracy or details of the climate science. This finding is congruent with findings in the existing literature on the importance of people's sense of agency and responsibility even in conversations that are ostensibly about climate science (e.g. Capstick & Pidgeon, 2014; Hulme, 2009; O'Neill and Nicholson-Cole, 2009).

Participants constructed the climate change issue as a duel between opposing interests. They set up a binary world of decent "ordinary people" and devious powerful people including politicians and media commentators who were "hoodwinking the masses" and using "spin" for their own ends. There was a sense that participants' duty as savvy citizens was to acknowledge the hoax and the spin and to try to "sift the truth". The conversations focused on ordinary people's prerogative to form their own beliefs and opinions about climate change based on their personal experiences and the views of those they trust, rather than on the advice of climate scientists or policy experts. There was an emphasis on the legitimacy of climate change views that were based on personal and subjective beliefs rather than on facts. As such, epistemic relations were downplayed (ER-): the debate is conducted not on the basis of competing scientific facts but on competing beliefs and opinions. There was a stronger emphasis on social relations (SR+): on the importance of subjective experiences and points of view.

Participants' opinions about climate change tended to match those of trusted sources in the 'us' group while the ideas of those in the 'them' group were rejected. They focused on the dubious character traits and motives of members of the 'them' group, namely Labor politicians

and climate scientists, rather than evaluating the merits or otherwise of their ideas. Again, the axiological judgments of character and division into 'us' and 'them' groups reflects a stronger emphasis on social relations (SR+). The lack of scrutiny of these parties' ideas relating to climate change means that epistemic relations were downplayed (ER-).

In summary, the conversations about climate change described in this section share three main features that relate to the underlying legitimization codes. Firstly, participants conceived of climate change itself in a binary way: about belief or rejection, a hoax or a real problem. These binary divisions suggest that participants had constructed two binary constellations of beliefs, described in more detail in section 4.5.1. Secondly, across a range of conversations and topics, the focus on people's beliefs, their agency and responsibility (or lack thereof), axiological 'us' and 'them' judgments of different groups of people, and the construction of climate change as something that is open to individuals' "views" and "opinions", all indicate that participants emphasize and valorize social relations (SR+). Further, that participants either do not mention or change the conversation away from the facts of climate science, and that they evaluate the merits of arguments on an axiological (value-based) rather than evidential basis, is indicative of weaker epistemic relations (ER-). Together, weaker epistemic relations (ER-) and stronger social relations (SR+) indicate that participants' views about climate change are underpinned by a *knower code* (ER-, SR+).

The third main characteristic of the conversations was their simple, local and context-dependent nature, which was manifested in a number of ways. Participants tended to reduce the climate change issue to the carbon tax as a symbol of 'them'. They also reduced physical climate change to the weather they observed at particular times in particular places, as physical, tangible, current and simple observations rather than systems and trends. The things they observed first hand were concrete rather than abstract, local rather than global. In LCT terms they exhibit stronger semantic gravity (SG+), meaning they are more strongly context dependent. The conception of climate change as simply hotter and drier weather represents weaker semantic density (SD-), as does the issue being cast in simple, binary terms and as being synonymous with the carbon tax. In these cases the concept of climate change has been emptied of its complexity and nuance. Together, stronger semantic gravity and weaker semantic density point towards participants sharing a *prosaic code* (SG+, SD-).

### 4.3 THE SOLUTIONS

This section describes participants' recommendations about how we should and should not respond to climate change. It includes their judgments of existing responses and their own proposed solutions. The previous section on The Problem demonstrated the workings of the 'if-then' moral rule (if we contributed to the problem, we should help to fix it). In talking about solutions, participants built upon this construction of a moral universe, in which good citizens "do the right thing" rather than the wrong thing and pull their weight ("do your bit") in helping to maintain a clean and pleasant environment.

The types of responses that participants supported included simple, tangible, voluntary, individual "do your bit" actions and simple and painless, often technological, solutions that do not require personal lifestyle changes. They were also supportive of taking action for a "clean environment" rather than climate change and deferring action on climate change until the science is certain. The responses that participants opposed included solutions such as the carbon tax that were associated with 'them' (Labor), Australia taking action ahead of "the worst polluters" and attending to future problems such as climate change at the expense of current problems.

It can be seen that the responses that participants supported rest on both:

- people's agency and personal attributes (sense of responsibility, political allegiances, preferred lifestyles); and
- simple, tangible, current, concrete, local, everyday actions.

These aspects are described in turn in below.

#### 4.3.1 Agency and personal attributes

Perhaps not surprisingly, participants' acceptance that humans have the ability or *agency* to mitigate climate change seemed to go hand-in-hand with proposing solutions to climate change, and conversely denying agency with not offering or rejecting solutions. For example, the participants who said "it's not something that can be changed by humans" (Joe), "everything is in God's hands" (John) and climate change "will not be able to be controlled" (Ted) all emphasized humans' lack of agency and dismissed various solutions as a "con" or "rip-off" and said they "will not work properly". In contrast, another participant said "Well

individuals certainly can do something” and “climate change can be managed and many manufacturing groups are working on this issue” (Jim).

Some participants suggested that while there was not much they could do, they had faith in future generations’ ability to take effective action: “I think that man will devise a way. They’ve devised a way for 40 or 50, 100 thous- 200 thousand years, I’m sure our kids will be smart enough to make it” (Geoff).<sup>11</sup> These actions might be catalyzed by humanity being forced to change, for example when the oil runs out (David). In summary, there was a strong sense that currently, many people in the community are either unwilling or unable to take effective action on climate change, but that this will change in the future.

To the extent that some solutions were said to be already available and viable, there was a sense that their implementation depends on ordinary people’s conduct as responsible, community-minded citizens. For example, citizens should potentially “put ourselves out... for somebody else” (Ted), for example by taking the train even when it was more convenient to drive. People should be responsible for looking after their ‘own backyards’, both literally and metaphorically.

Towards the end of the event participants arrived at the following “punch line”:

Louise (pointing to the conversation map): I think this should be changed, the word should not be climate, I believe the word should be society change. Because that’s what’s accelerating it.

Geoff: Louise, write down societal climate change. ...That’s a big punch line from here.

Louise: Because climate change is coming back to the society, the increase in population.

Geoff: Societal climate change. Credit the people with having a conscience.

Here, “societal climate change” was interpreted very differently by the two participants. “The increase in population” that is “accelerating” climate change could have been about causal factors, a strengthening of epistemic relations. However the other participant immediately turned the conversation back to stronger social relations: the point or “punch line” became all

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<sup>11</sup> Interestingly, the themes of human ingenuity and agency, as well as media “spin” and natural cycles previously mentioned, also featured prominently in UK focus group conversations in Capstick and Pidgeon’s (2014) study.



about people's consciences and trusting them to conduct themselves as good, moral citizens. In these and other conversations it became clear that the right type of person is a community-minded citizen who is prepared to do (some) things for the common good.

Participants recommended a renewed focus on education and fostering the right "mentality", in order to cultivate the right type of citizen who would then be motivated to carry out the required responses to climate change or to achieve a "clean environment". They advocated for education to change "behavior and thinking" (David), "where you're not forced to learn it but it's a style of thinking that's sort of implanted in you" (George). They recommended that primary school children be taught "to learn to respect nature" (Jock C.), and "if we educate the young" then "society will change" through their needs and desires being realized (David).

Larger companies and governments were said to be able to influence people and facilitate the required actions: "so if councils hadn't brought in the recycling bins it wouldn't have made such a big impact on people to realize we do have to do something" (George) and governments need to "put things into place for us in the community,... for the *lay* person, to be able to do their bit and being given financial strategies to do that" (Louise). Although such policy interventions were less personal and more abstract in nature, they were still geared towards the right kind of citizen "doing their bit" in the form of simple, local, tangible actions. A participant held up the US household reuse centers as an exemplar: "you go and put your lounge chairs here and then you drive to the next one and you go and put kids' toys there... and people who need that stuff, they come along and take what they want" (Louise). This measure is clearly very local, tangible and concrete. Its other notable feature is the centrality of the citizen. In this participant's account, what was important was not a technical assessment of how much greenhouse gas abatement could be achieved through such a measure but that it gets people involved in "grassroots" activity and provides a direct community service to "people who need that stuff" as well as an environmental benefit.

Climate change solutions were also associated with either an 'us' or a 'them' group (see 4.2.3). As a general pattern, participants positively evaluated solutions that were associated with the 'us' group and negatively evaluated those associated with 'them'. One solution, carbon pricing, was the subject of particular opprobrium. In fact participants uniformly referred to it as "the

carbon tax”, as did the Liberal-National Opposition<sup>12</sup>, rather than the government’s “carbon pricing”. Participants singled out the carbon tax as representing all that was wrong with ‘them’, in this case the ruling Australian Labor Party. It was said to be another manifestation of Labor’s tendency to “spend a lot of money and tax” (David). “For Labor it’s part of their dreams come true, they’re able to take from big businesses and redistribute [wealth]... and gather a lot for their own coffers on the way” (Jock), “so they have more money for their hangers on” (Joe). Other statements paint the government as operating in an unethical and “opportunistic” way with ulterior motives for introducing the scheme: “they’re using this carbon tax to totally increase things like energy prices” (Shann).

In more general terms, participants characterized the government’s proposed climate change solutions as “the socialist, formerly communist orientated government, protecting us and telling us what to do, almost like China” (Geoff) and imposing a “penalty” (Jock). In contrast the solutions proposed by participants were “grassroots” actions by the community (goods reuse centers) or individual actions (composting, recycling) which were apolitical, tangible and voluntary actions that would be carried out by good citizens. There was a sense that ordinary citizens should be trusted to get on with making their own decisions and actions in everyday life. It was said that “the multiplier effect of the voluntary application” of people taking action by following their common sense and desire to save money “far outweighs all the nonsense they’re going on about the carbon tax” (Geoff).

Further to the division into ‘us’ and ‘them’ groups, participants judged climate responses to be fair or unfair based on whether the parties involved were said to be fulfilling their responsibilities or not. There was a sentiment that governments, industries and countries have moral responsibilities to ‘play fairly’ and a duty to ensure that solutions are fair and equitable. The carbon tax was seen as being unfair because “they’ve let the biggest polluters off!” (Shann). There was also a perception that Australia, “the cleanest country in the world” (Joe) should not be required to take action on climate change and that this responsibility falls to more polluting countries, primarily China and India. Australia was said to be shouldering an unfair burden by acting alone to our detriment: “it increases all our energy prices and makes us less competitive, and we don’t know anyone else around the world who’s doing it.” (Jock). It represents double standards in that China and India do not have to pay a carbon tax: “we export coal to China and

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<sup>12</sup> Liberal leader, Tony Abbott, described it as a “great big new tax” (Taylor, 2009).

they can do what they bloody like with it!” (Joe) and “it’s alright for them to do it and not pay a tax on it” (Ted). These assessments are based on judgments of fairness and responsibility of different groups of people. They are value judgments made on axiological grounds that paint a good ‘us’ (ordinary citizens; Australia) and a bad ‘them’ (polluting industries; China and India).

#### **4.3.2 Simple, local, tangible solutions**

Several participants expressed the view that climate change was not a problem and that other more tangible issues were of more pressing concern. For example, “[climate] changes from day to day. So what? What effect does it have on us?” (Ted). Instead, people should “do their bit” for a “clean environment”. The contrasts participants made between climate change and the carbon tax, and “doing something” for a “clean environment” or to reduce “pollution”, included statements such as “we need to do something about pollution, ...but the carbon tax” is unnecessary (Jock); and “we have to do our utmost to make it a clean environment... but climate change, as far as I’m concerned, is just a reason to introduce another tax that isn’t necessary” (Ted). The issues that participants said should receive attention ahead of climate change included: “look after the children of today rather than the children of the future” (Jock Cimino), help feed starving people (Joe), and attend to the big floating mass of plastics in the ocean (David). The certain existence of these problems and their relatively simple, tangible solutions stood in contrast to the uncertainty of future climate change impacts and actions that may or may not be required in the future.

In a similar vein, participants said that everyone should “do your bit”, “do your part”, “do the right thing”, “do something about pollution”, do “the little steps that we all put in”, “try to be clean” and “try to be green”. Sometimes the purpose of these actions was identified as being to address climate change, sometimes to maintain a “clean environment”, while at other times it was not specified. The types of “do your bit” actions that participants identified were simple, everyday, commonsense, local and tangible (recycle, compost, don’t litter, pick up others’ litter, turn off the lights, conserve water, plant trees, keep the backyard mown and tidy, get smoky car exhausts fixed).

In contrast, the carbon tax clearly did not fit into the model of simple and tangible solutions. It is a complex, abstract, intangible solution that works to reduce emissions by incentivizing a transformation of the energy supply system towards being less carbon intensive. It is thus a complex mechanism that is invisible to lay people except through the negative experience of

paying higher electricity bills. In contrast, participants' understanding of the carbon tax was simply about money transfers to and from the government: "it's not necessarily *doing* anything, it's just raising money" (George), "if they're getting all this money in, then they're giving it back, what's the point?" (Alan), and "they've collected money but then they've redistributed to the rest of the community. If they're fair dinkum, keep the tax and put it to good work!" (Bob).<sup>13</sup>

To the extent that participants did advocate for responses to climate change they sometimes spoke about the need to reduce "pollution", as in: "what can you really do about climate change anyway apart from, ah let's say reduce pollution" (Ted). As mentioned in section 4.2.1 on physical climate change, "pollution" always meant visible air pollutants (particulates, smog, smoky car exhausts, "dark green cloud" over China) rather than greenhouse gases which are invisible. This represents a simple, one-dimensional meaning of pollution, being visible and directly perceptible to participants through their lived experience visiting China (Geoff) or working as a car mechanic on smoky car exhausts (Joe Comino).

There was a sense that climate change is a 'tame' rather than a 'wicked' problem, in that it can be solved by simple and painless solutions (usually technologies) that do not either change or require changes in other parts of physical or social systems. One of these solutions was said to be nuclear energy, in response to: "There will be something that comes along which will be the answer" (Alvan). In other words it represents a 'silver bullet' solution that will solve the problem. Others described hydroelectricity as an easy way to generate electricity with "no carbon or effort" (Jim), and the only reason it is not more widespread is that its deployment has been stymied by "greenies" (Frans). In other examples, participants had faith that new technology to burn coal "cleanly" would be developed (Bob, Alan). Another participant described a "big study that everything [greenhouse gases] gets dumped into the ocean and comes out over the other side. All they gotta do now is get a skimmer and pick it up on the other side and it's all over" (Geoff), which again represents a silver bullet solution.

In these examples, climate change would be solved if we could just implement more nuclear power or hydroelectricity, develop clean coal, or scoop up the gases in a giant skimmer. These were all painted as simple, easy solutions. In addition these solutions allow individuals to

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<sup>13</sup> "Fair dinkum" is an Australianism meaning honest, genuine, real.

maintain their current lifestyles without any personal sacrifice. As one participant said about hydroelectricity: “From the Snowy River T3 power station, ... you can push electricity in five minutes, in the winter time, from an idle power station to Sydney people, with air conditioning, whatever they use” (Jim). So as well as being framed as being simple and straightforward, the aspect of technologies that is emphasized is not their technical attributes or their potential to reduce emissions but their servicing of ordinary people’s needs and desires.

#### **4.3.3 Discussion**

This section described the way in which participants’ solutions rest upon the right type of person, being a community-minded citizen, and on technological developments that can service citizen’s needs. Judgments of climate change solutions were made on the basis of fairness and equity in proportion to the responsibilities of different parties, on the delivery of benefits to people in the community as well as an environmental benefit, and on participants’ morals, political allegiances and preferred lifestyles. As such, these findings are congruent with existing literature on the key role of knowers’ attributes of political orientation (e.g. Campbell and Kay, 2014) and self-transcendent values of fairness and equity (Corner, Markowitz and Pidgeon, 2014) in shaping their views about climate change. However, as described in chapters 2 and 3 and depicted in figures 2.5, 2.7 and 2.8, the present study focusses primarily on the organizing principles of claim-makers’ statements, to which we now turn.

Section 4.2.3 described participants’ binary world in which people were assigned to an ‘us’ or ‘them’ group. Accordingly, climate change solutions were associated with one or the other group. As a general pattern, participants positively judged solutions that were associated with the ‘us’ group and negatively judged those associated with ‘them’. The fact that evaluations were not made on the basis of evidential points such as the technical feasibility of solutions or their emission abatement potentials means that epistemic relations were downplayed (ER–). The focus on solutions resting on people’s attributes and servicing their needs, and the value judgments of solutions on the basis of their association with an ‘us’ or ‘them’ group, are indicative of stronger social relations (SR+). Together the weaker epistemic relations (ER–) and stronger social relations (SR+) indicate a *knower code* (ER–, SR+).

In relation to the LCT dimension of Semantics, at least some of the sentiments about climate change being unproblematic appeared to stem from viewing climate change as daily changes of the weather (“[climate] changes from day to day. So what? What effect does it have on

us?”). To the extent that climate change was seen as being problematic, it was portrayed as a ‘tame’ problem with simple and painless solutions. The tangible, current, concrete, local, everyday nature of the “do your bit” solutions that participants favored means that they are more strongly context dependent, that is, they exhibit stronger semantic gravity (SG+). The simple, one-dimensional nature of concepts such as turning off lights or planting a tree reflects weaker semantic density (SD–), or weaker condensation of meaning in these concepts. Hence the solutions proposed by participants were underpinned by a *prosaic code* (SG+, SD–).

In another manifestation of the prosaic code, participants tended to segment problems from solutions, and they isolated individual solutions as stand-alone concepts that were not necessarily related to each other. The context-dependent, segmental nature of the solutions reflects stronger semantic gravity (SG+). Their simple nature, not being rhizomatically interconnected, reflects weaker semantic density (SD–). Hence the segmenting of problems and solutions is itself a sign of a prosaic code (SG+, SD–). The think tank participants’ conception of solutions provides quite a contrast to this, as described in Chapter 5.

As a general pattern, the solutions that the Rotary participants said they supported aligned with their knower code and prosaic code while those that they opposed did not. Carbon pricing (“the carbon tax”) provides a clear example of how the dimensions of Specialization and Semantics worked against its acceptance by participants. In the form in which it was developed, carbon pricing was based on technical assessments of pollutant emissions, modeling, verification and compliance, all of which exhibit stronger epistemic relations (ER+). The social elements relating to consumers’ or industry tastes and preferences or motivations for action do not feature strongly, reflecting weaker social relations (SR–): a *knowledge code* (ER+, SR–). Further, carbon pricing is an abstract, intangible solution that thereby exhibits weaker semantic gravity (SG–) and it is highly complex involving indirect chains of causation and effect, reflecting stronger semantic density (SD+): a *rhizomatic code* (SG–, SD+).

In contrast, the Rotary participants translated carbon pricing into “the carbon tax” and associated entities that were personal, concrete, local and current. As described in section 4.2.2, in their conversations the climate change issue was synonymous with the carbon tax which in turn evoked talk about (then) Labor Prime Minister Julia Gillard and participants’ disapproval of her government on the one hand, and support for Liberal leader Tony Abbott

and the opposition on the other. The carbon tax became emptied of its technical and evidential aspects, reflecting weaker epistemic relations (ER-). The focus on personalities and their motives and character traits reflects stronger social relations (SR+): a *knower code* (ER-, SR+). The carbon tax was also translated into more simple and concrete things. It became simply about money transfers to and from the government (“if they’re getting all this money in, then they’re giving it back, what’s the point?”), reflecting stronger semantic gravity (SG+) and weaker semantic density (SD-): a *prosaic code* (SG+, SD-). In this way participants transformed the concept of the carbon tax from a knowledge code to a knower code, and from a rhizomatic code to a prosaic code. It then matched participants’ own legitimation codes. In short, there was a sense that the carbon tax acted as a ‘lightning rod’, condensing everything about climate change that is nebulous and that participants disliked and could not understand into something concrete with a name (carbon tax) and a face (Julia Gillard).

In contrast to the carbon tax, participants’ “do your bit” actions were simple, local, tangible, concrete, everyday and commonsense as well as being actions taken by individuals, and particularly by a certain type of community-minded good citizen as members of the ‘us’ group. As such they matched participants’ preferred approach to solutions that was underpinned by a knower code and a prosaic code, and expressed in the form of good citizens doing good things.

#### **4.4 Basis for knowing about climate change**

The previous section described how participants constructed climate change and responses to it, and the organizing principles (legitimation codes) of those constructions. This section outlines the basis on which participants said they formed their views about climate change and climate change responses. In short, these were based on:

- Lived experience, or ‘what I’ve seen’
- Profession-based knowledge, or ‘what I know through what I’ve done’
- Personal attributes and identity, or ‘who I am’
- Trusted sources, or ‘who I trust’.

In addition, they tended to downplay or dismiss climate science as a legitimate basis of knowing about climate change.

#### 4.4.1 Lived experience

Lived experience refers to participants' personal observations or experiences in the physical environment, such as extremes of hot and cold, periods of drought and rain, and air pollution in China. In general these observations were used as evidence for human-induced climate change either not existing or being insignificant in comparison to other issues. These types of statements cast climate change as a subjective matter of opinion, based on a person's perception of the world around himself or herself. As an example:

Well in my view, I think I've seen this sort of climate. Actually I come from a tropical country and always there is rain and always it is dry but at the end of the year everything will be normal so from my point of view I haven't seen climate change (John).

Another participant portrayed climate change as being the changes that people experience when they move from one climate (European) to another (Australian):

Most of the people in the room were about my age, ah late 50s early 60s and ... they've come from all parts of the world, and the only change they've seen is that they've just come to a different country and the climate there is different to what they had let's say back in Europe. ... I've known Australian climate all my life and I don't- I haven't seen any change at all, it's the same as it has been for over 60 years for me. (Ted).

These examples are also localised and context-dependent, relating to the climate that individuals know in a particular country, and they represent simplified understandings of climate change in which climate is reduced to weather. The same participant described "all I knew was when I stepped outside it's either raining or sunny (chuckle), that's the climate change" (Ted). In similar examples, climate change was rendered to mean drought, and snapshots in time were taken to be indicative of climatic trends.

Another participant described China's air pollution as being real and problematic as demonstrated through his firsthand experience visiting China, whereas the "jury [is] still out" on climate change (Geoff). Interestingly his one concession, that pollution might be accelerating climate change, also seemed to be related to this personal experience:

I've been to China ...you can walk down the streets, you feel like, (reaches up with hand) stretching your hand out to the green cloud of gas above you, there's just so much of it in all their big cities, and that could be a factor that accelerates climate change (Geoff).



In this way his lived experience also provided the evidence that humans might contribute to climate change.

In the above examples, climate change is established as something that can be directly experienced by individual people. In a similar vein, one of the participants spoke of being uncertain about the recovery of the hole in the ozone layer because he could not directly perceive it himself: “apparently that’s supposed to be healing but I can’t see it, I can’t see the hole in the clouds ... it’s not in my hand and I can’t see it change color, or something happening to it.” (Ted). He was uncomfortable accepting this as fact because it is intangible (“not in my hand”) and invisible (“I can’t see it”). This reflects the lived experience basis of knowing that resides in individual knowers and depends on experiencing tangible or directly perceptible phenomena. It is also a disavowal of the science around this issue as something that cannot be personally experienced (at least by a lay person) and therefore cannot be trusted.

#### **4.4.2 Profession-based knowledge**

On several occasions, participants said they were basing their claims about climate change and appropriate responses to it on knowledge and experience that related to their professions. One might expect these statements to be based on specialized knowledge that is more abstract, less local and personal, and with stronger emphasis on facts and empirical (epistemic) relations. In fact the emphasis was again on the legitimacy of people’s personal experiences and their identities as savvy knowers rather than the epistemic nature of their arguments. In addition the statements were very local, concrete, simple and context-dependent.

Participants set themselves up as savvy knowers whose professional experience had given them particular insights and evidence that climate change itself was a “hoax” or that various climate change solutions were undesirable. Energy saving measures were said to be “a big con, right? I’m an electrical person so I should know a bit about electrical” (Joe). Water and energy saving devices are “all expensive, from my point of view as a plumber” (John). In another example, a retired fire brigade officer who had worked in equipment procurement and maintenance asserted that the fire stations were “all falling apart” because of funding shortfalls, from which he concluded that “the reason that they’re using the excuse of carbon change [sic] ...is to get enough money to fix the buildings” (Ted). In these examples, participants’ knowledge about what is going on in the climate change issue was based on their

personal workplace experiences as a plumber, an electrician and a maintenance officer, respectively.

Another participant spoke about his profession-based knowledge to make a point about the responsibility and agency of various parties:

I used to work in the coal industry, we export 100 million dollars an hour round the clock, and that's what 27 thousand dollars a second, that's iron ore and everything, coal. But are we, the coal industry is enormous, and it's, it's powering particularly the economy in central Queensland there. Are we doing anything to stop... Palmer and Rinehart<sup>14</sup>, who want to provide fifty years of steaming coal to India, they're going to burn that, what are we doing there? (David).

While this participant did mention some facts and figures about the size of the industry, he turned the conversation back to different groups of people with India also meaning 'the Indian people'. He identified people who are powerful, those who are abrogating their responsibilities to reduce emissions, and those like himself who are cogs in the wheel, unable to do much about the situation. The statement emphasizes different groups of people and their roles, responsibilities and varying levels of agency, rather than profession-based technical knowledge. It also focuses on things that are locally relevant (Australian coal, Australian/Queensland economy, local personalities), and that are concrete or material, about exporting and burning coal.

#### **4.4.3 Personal attributes and identity**

Participants suggested that a range of personal attributes had influenced their views about climate change, including being wise and "not easily swayed", sharing "similar views" and "group thinking", and being a certain "type" with a certain "mentality". All of these attributes relate to being a certain type of person or *knower*.

Participants' relative homogeneity of views on climate change was attributed to "our age group" and "cultural background" (David) and "fit[ting] into a demographic that is conservative, Liberal, in the main Christian, and having certain values" (Shann). They knew the

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<sup>14</sup> Clive Palmer and Gina Rinehart are Australian 'mining magnates'. They feature relatively prominently in the Australian media in connection with various personal, political and business affairs.

right things to do based on “common sense” and what was done in the “old days”. They were savvy enough not to be duped by the climate change “hoax”, having seen previous hoaxes like Y2K and having experienced many different climatic conditions over time. As discussed in section 4.3.2, participants repeatedly expressed that they and others should “do the right thing” in terms of serving the community and contributing as a good citizen. They said that they knew what these things were “instinctively” and by having the right “mentality” inculcated from childhood. For example:

We know instinctively it’s the right thing to do. We know that if we have an option of say um putting the onion peelings and the potato peelings in the compost bin? A-ha? Because we know it’s going to be used, it’s going to help better vegetables either in our own garden or somebody else’s. ...There are things we do because we know it’s the right thing to do (Shann).

Another participant said that caring about climate change or a clean environment and taking appropriate actions came from being “the type” and having “the mentality”:

I think I’ve always been the type and it just goes back to childhood where you just try to construct or recycle things, so ...if a toy was broken, you’d, sort of repair it and then use it as something else. Um, and I guess that’s where it started the mentality that resources are very scarce, and started the mentality that you do have to look after our, our, planet I guess (George).

The activities that participants and their ancestors did in the “old days” were also said to provide a normative guide for what should be done now. Examples include: “in the old days we used to plant a tree once a year” (Jock C.); “composting ...it’s called living in a community, which we’ve done since year dot” (Shann); “That’s right, it’s something our ancestors did” (Louise).

#### **4.4.4 Trusted sources**

Participants set up binary groups of ‘us’ (trusted sources) and ‘them’ (sources that are not trusted), described more fully in section 4.5.1 on constellations.

The sources that participants said had been influential in shaping their views about climate change typically aligned with participants’ self-identified personal attributes and identities as being older, Christian, conservative and Liberal party voters. Influential sources included their own Christian faith and two particular public figures: conservative talk-back radio host Alan

Jones and (then) Federal Liberal Leader of the Opposition Tony Abbott. Participants described their religion as having not only spiritual dimensions but also tangible and material realities and consequences, such as God controlling weather and climate (“everything is in God’s hands”: John). The emphasis on all things local, tangible and material included taking the Bible literally rather than metaphorically<sup>15</sup>, as in the following examples:

There’ve been floods going back to Noah’s day, when he had to build an ark and run around making sure there were, pairs of whatever, on board (Geoff).

If you believe in the Bible or God this sort of thing, you realize that it changes and the end of the world is gonna come no matter what we do about it (Joe).

In contrast, climate scientists and government agencies with responsibility for communicating with the public about climate change were not trusted sources for these participants. They were notable by their absence, or when they were mentioned, they were characterized as being flawed or having ulterior motives. Similarly, during the event and interviews there were only two brief mentions of Al Gore’s documentary film *An Inconvenient Truth*. This is perhaps unsurprising given the film’s focus on mainstream climate science, which people in the participants’ ‘us’ camp (e.g. Abbott and Jones) had questioned, and Gore’s identity as a prominent Democrat meaning that he is likely to sit in participants’ ‘them’ camp. One of the two participants who mentioned the film had not seen it and distanced himself from it: “will there be more cyclones ... will the oceans rise, this is what Al Gore was talking about in his- I never saw it, it’s just what I heard about it” (Ted). Thus it would appear the film was not a trusted source for this group of participants.

#### **4.4.5 Downplaying climate science**

The previous four subsections outlined the ways in which participants know about climate change that relate to personal, grounded-in-everyday experiences. In contrast, participants tended to reject or downplay climate science. This was manifested in the conversations in a number of ways.

Firstly, the conversations were marked by the absence of climate science: participants were largely silent on the scientific evidence for climate change. They tended to evaluate ideas on

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<sup>15</sup> This is not to judge whether a literal (concrete rather than abstract) reading of the Bible is right or wrong, only that it is suggestive of a prosaic code.

an axiological rather than evidential basis. This was also reflected in the views of trusted sources such as Alan Jones and Tony Abbott taking precedence over experts in the field such as climate scientists.

Secondly, when scientific concepts were raised they were rejected or the conversation was turned back to considerations of agency and responsibility, as in the (A), (B) move in which the point of the conversation became people's inability to deal with climate change (see 4.2.1 on physical climate change).

Finally, participants expressed their inability to engage with the science and to arbitrate between scientific claims. For example, one participant said he had heard something about a change in the Earth's axis but he didn't know "whether it's fact or fiction" (Jock). Another admitted that he hadn't read any scientific literature, saying "it would probably drive me nuts" and "each of us knows a little bit, but whether that little bit is relevant or not is another thing" (David). Others expressed their frustration at being unable to arbitrate between (perceived) competing scientific claims: "We sit on the sidelines", "we've got to accept" the science but we don't know if we can trust it, "is it being interpreted in the right fashion?" (Alvan). It became clear that participants were also unable to arbitrate between each other's claims about the science, as illustrated by the following conversation:

Geoff: I think there's pollution, much more than there ever was in the other ice ages and so on, but I think it's a minor part of it?

Shann: Well it's the increase, it's the population increase which has been exponential.

Jock: But what caused us to come out of the last ice age?

Shann: Climate change! There was a climate change effect!

Jock: Was that humans?

Geoff: {No, not at all, there weren't enough humans to-

Shann: {No, no! that's the natural, (waving hand in a circle) the natural cycle. But with the increase in humans, that cycle spins quicker.

Geoff: But there's no evidence of that either.

Shann: Yes there is!

#### 4.4.6 Discussion

Each of the four bases of knowing about climate change (lived experience, professions, personal attributes and trusted sources) exhibits elements that relate to both individuals and the groups they identify with, as well as to simple, local, directly perceptible entities.

Climate change was established as something that can be directly experienced by individual people through their lived experience of the physical environment, through observing directly perceptible phenomena such as changes in the weather. Participants' statements about profession-based knowledge all emphasized people's identities, roles and responsibilities rather than the epistemic nature of their arguments. In describing personal attributes and identity, participants set up the right type of knower or ideal knower, following their "common sense" to tell them what was the right thing to do, with a nod to the good things that community-minded people like themselves did in the "old days". The statements are axiological (based on value judgments) rather than epistemological, focusing on having the right attitude and doing the right thing. Participants' choice of trusted sources was based on conservative 'people like us' and it was also linked to their faith and their identities as Christians.

In all of the above characteristics relating to lived experience and people's politics, identity and faith, the emphasis is on subjective experiences and personal preferences rather than objective, measurable evidence. As such these characteristics reflect stronger social relations (SR+): they focus on the characteristics of the people who hold these views rather than on the merits of the views themselves. In contrast, climate science was downplayed, reflected in a number of ways including its absence from the conversations, the views of trusted sources taking precedence over climate scientists, the shifting away from the science to concerns of agency and responsibility, and participants' inability to arbitrate between scientific claims. This downplaying of climate science signifies a weaker valorization of the evidence, or weaker epistemic relations (ER-). The basis in weaker epistemic relations (ER-) and stronger social relations (SR+) signifies a *knower code* (ER-, SR+). It is telling that even statements that were based on professional knowledge were still grounded in a knower code.

In terms of Semantics, climate change was reduced to more simple, local, directly perceptible entities in a number of ways. Climate was reduced to weather or drought that participants

knew about through their lived experience, and snapshots in time were taken to be indicative of climatic trends. Climate science, which involves measuring and monitoring abstract and intangible things like greenhouse gas concentrations, provides a stark contrast to the lived experience basis of knowing. Participants suggested that their professional experience had equipped them to know about climate change. Based on their experience with local and tangible things like solar hot water systems, light bulbs, car exhausts and buildings that were falling apart, participants passed judgment on the existence or otherwise of climate change itself and the effectiveness and desirability of various solutions. In this way, participants made generalized conclusions about climate change on the basis of one local, tangible example. The personal attributes of people who “do the right thing”, such as following “common sense” and things they did in the “old days”, were realized in the form of local, tangible actions such as composting and planting trees. Participants’ religion was not only spiritual but had material realities and consequences, such as God controlling weather and climate (“everything is in God’s hands”). In Chapter 7 the tangible and material nature of these attributes is contrasted with the abstract and theoretical political ideologies of the think tanks.

The Rotary participants’ basis of knowing in things that are local, tangible and material means that they exhibit stronger context dependency, or stronger semantic gravity (SG+). The focus on simple, singular concepts with weaker condensation of meaning within them equates to weaker semantic density (SD-). Hence these are reflective of a *prosaic code* (SG+, SD-).

Thus it can be seen that participants’ basis for knowing about climate change is underpinned by a knower code and a prosaic code.

#### **4.5 COSMOLOGIES AND COMMON GROUND**

The previous section examined participants’ constructions of climate change and the basis of those constructions in terms of their legitimation codes. This section describes the way in which participants’ talk about climate change and climate responses tended to cluster into groups of ideas, termed *constellations* in LCT. These are collections of concepts that have been grouped together and charged with meanings and judgments (section 3.2.2). The section first describes the binary structure of the constellations and briefly describes their contents, demonstrating the ways in which participants’ legitimation codes underpin the constellations. The section then turns to a number of shifts in participants’ views and examples in which they found

agreement that climate change exists and is a problem worth addressing (common ground). These examples demonstrate the importance of the cosmology, as expressed through legitimation codes and constellations, in shaping the conversations.

#### **4.5.1 Binary constellations and their codes**

The Rotary conversations tended to cluster into two binary (opposing) groups of ideas or constellations. One of these was positively evaluated or 'good', and the other negatively evaluated or 'bad'. An outline of the two constellations is provided in Table 4.1 overleaf.



**Table 4.1: Rotary participants’ ‘good’ and ‘bad’ constellations**

	<b>Negatively evaluated, ‘bad’ constellation</b>	<b>Positively evaluated, ‘good’ constellation</b>
The issue, the goal of action	Climate change: as a “hoax”, a political and financial issue, a scam to introduce the carbon tax and serve vested interests	Environmental concerns: “do your bit” for a “clean environment”, reduce pollution, waste, litter
	Climate change: as a complex scientific problem, one that people cannot fix	Climate change: as a current problem that is being adequately addressed (e.g. by “manufacturing industries”) Climate change as a future problem that will be solved through simple and easy technological solutions that will soon be invented.
	Climate change: as a problem that requires very undesirable fixes (including Labor Party solutions such as the carbon tax).	Climate change: as a problem that can be fixed through simple and easy Liberal Party consistent solutions (e.g. “direct action”)
The parties involved	“Opportunistic” Labor/Green politicians, government bureaucracies and climate scientists, who are benefiting from the issue that they manufactured Climate scientists are fallible in their modelling and predictions “Greenies” thwart climate solutions such as hydroelectricity	God Participants themselves: smart (not deceived by the “hoax”), good moral citizens who “do the right thing” Fellow conservatives and Christians “Legitimate” research scientists; people who will come up with the technological solutions to climate change
	Labor Party: “spend a lot of money and tax”; carbon tax to achieve goal of “wealth redistribution”	Liberal Party: “small government”, “let free enterprise be productive and make investment decisions”
	The countries with “all the pollution”, especially China and India	Australia, “the cleanest country in the world”
	Big industry: “They’ve let the biggest polluters off the hook!”	“Manufacturing groups have always looked at how they can change.” “There’s people looking at how they can make cleaner coal”

Approach to climate change responses	Humans can neither cause climate change nor mitigate it (lack of agency).	Humans will be able to mitigate or reverse climate change in the future, if and when they need to. Humans can create or maintain a “clean environment”, if everyone “does their bit” as good citizens.
	Planning and intervening for the distant future (50, 60, 100, 200, 1000, 2000 years) is fruitless (“We got no control on climate change”; “the end of the world is coming no matter what we do”).	Act now, on problems that are more urgent than climate change (“Look after the children of today rather than the children of the future.” “Starving people, and we go and give them some tax for carbon!”)
	A “knee-jerk” reaction to climate science research.	A considered response based on a collation of research findings, “so they scare less the people”.
Motivations for action	“Hoax for politicians to stay in power”, “to fund the government’s activities”, “to pay for infrastructure maintenance”, “a money making business for the politicians” “and the scientists”.	“Do the right thing”, “living in the community” “Save money”
The solutions	Ineffective solutions with negative impacts, associated with ‘them’: Carbon tax (“ripoff”, ineffective: “not necessarily doing anything, just collecting money”; Labor’s “dream come true”) Energy efficiency devices (a “con”, “will not work properly”) Wind energy (“unsightly”, ineffective).	Effective, attractive solutions, actions we take as good citizens: Solar power, electric cars (“so clean and efficient”) Planting trees (“what we did in the old days”) Waste issues: Recycling, composting, picking up litter (“do the right thing”)
How to facilitate solutions	Government “dictating what we should do”, “socialist”, imposing a “penalty”.	Education “Internal motivations and incentives”, voluntary actions, “altruism”, fostering the right “mentality” “Society change” / “societal climate change

<p>Basis for knowing about climate change and appropriate responses</p>	<p>Climate scientists and their models and predictions: fallible, intangible (“it’s not in my hand and I can’t see it”).</p>	<p>What I’ve seen (“plenty of rain” in Australia; pollution in China)  Professional experience (energy efficiency devices are a “con”)  Trusted sources (Alan Jones, Tony Abbott, school, the Bible, “in the old days”, “what our ancestors did”, “common sense”, right “mentality”).</p>
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In short, the 'good' constellation was comprised of things that are tangible and "common sense" and are seen as part of "doing your bit" as a good citizen. The parties that participants positively evaluated included good citizens in the community, including themselves and others who act responsibly by looking after their own patch, trusted sources such as Alan Jones and Tony Abbott, and "legitimate" research scientists who are working on technological solutions to climate change. Participants described the ways in which they were similar to each other both in demographics and in being "very well united when it comes to talk about climate change" (Joe). They also differentiated themselves from other groups of people, for example on the basis of the absence of "green" views (David, George), "because we're sensible people" (Shann).

In the 'bad' constellation were things that participants did not understand or trust and that are associated with 'them', people of the opposite politics, "the socialist, formerly communist orientated government, protecting us and telling us what to do, almost like China" (Geoff), the "opportunistic" politicians and climate scientists who had concocted the climate change issue, the countries with "all the pollution", especially China and India, and various climate change advocates who were negatively judged to be "hypocritical" ("the air miles and the power that goes to putting together the climate change summits") and generating unnecessary government spending ("another bloody department [that] they've created" at a cost of "millions and millions and millions of dollars"). It also included things that are intangible, inaccessible and distant in time or space, such as the government agencies that are out of touch with ordinary people's thinking and actions ("they got rocks in their head!"). Assigning climate scientists to the 'bad' constellation was based on an axiological character judgment of climate scientists as devious people who perpetrated the hoax for their own financial gain through ethically questionable practices such as being selective with data ("which scientific data do they wish to promote?": Jock). The character judgment was also based on a local, current, context-dependent understanding that climate scientists' predictions were wrong. More rain in Sydney, fuller dams and insubstantial sea level rise ("millimeters!") were said to prove that there is no (human-induced) climate change or none worth worrying about.

What is of interest from a theoretical point of view is not so much the content matter of which things made it into the constellations of this particular engagement event, but why they did. The above examples relating to 'us' versus 'them', concrete versus abstract, local versus global,

personal versus collective or governmental, suggest that the answer lies in the legitimation codes. In previous sections we saw that participants' statements about climate change are predominantly underpinned by a *knower code* (ER-, SR+) and a *prosaic code* (SG+, SD-). In the constellations, a knower code is expressed in the form of binary, axiological judgments of 'good' and 'bad' that are made on the basis of personal preference, allegiance, identity and worldview rather than on an epistemological basis related to explanatory power. 'Good' things were those that were personal, subjective, about beliefs and significant others (knower code). They were also concrete, local, simple and everyday (prosaic code).

The key role of participants' legitimation codes is demonstrated in the way that participants accepted climate change in the 'good' constellation when it matched their knower code and prosaic code and rejected it, relegating it to the 'bad' constellation, when it did not. This meant that climate change was assigned to the 'good' constellation as something real and worthy of action when spoken about as:

- an environmental issue, including when talked about in relation to a "clean environment" or reducing pollution (prosaic code: about local, visible and tangible impacts);
- a current problem that is being adequately addressed, including through citizens "doing the right thing" (knower code: citizens' agency and responsibility; prosaic code: simple, local, tangible solutions);
- a current problem that can be fixed through Liberal party consistent solutions such as "direct action" (knower code: relating to the Liberal party as a member of the 'us' group);
- a future problem that will be solved through simple and painless technological solutions that will soon be invented. Here, participants ascribed agency to the next generation, and absolved themselves of some responsibility to act now, thereby maintaining their identity as good citizens<sup>16</sup> (knower code: agency and responsibility; prosaic code: simple and concrete technologies).

In contrast, climate change was rejected or negatively evaluated ('bad') when framed as:

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<sup>16</sup> See section 4.3.1 on participants' faith in the next generation's ability to take effective action. For example, "I think that man will devise a way ... I'm sure our kids will be smart enough to make it" (Geoff).

- a political and financial issue, a “hoax” to serve various vested interests (‘them’ group; rhizomatic code: intangible, inaccessible carbon markets that participants said they did not understand);
- a problem associated with the Labor Party’s carbon tax (about ‘them’ and a complex and abstract solution that participants said they did not understand);
- a complex scientific problem that people cannot fix (knowledge code: science; rhizomatic code: unfixable due to size, scale and complexity).

Thus, acceptance of climate change was associated with code matches involving a knower code and a prosaic code, and invocation of an ‘us’ group. Conversely, rejection of climate change was associated with code clashes involving a knowledge code and a rhizomatic code, and/or a ‘them’ group that was negatively evaluated in accordance with participants’ knower code.

#### **4.5.2 Shifts and common ground**

Chapter 1 outlined the normative goal for the present study, which implies a particular interest in understanding shifts from rejecting to accepting climate change and various climate responses. As described above, the Rotary participants sometimes assigned climate change to the ‘good’ constellation, sometimes to the ‘bad’, depending on whether or not the way it was framed matched participants’ legitimation codes. There were several examples of shifts they made towards accepting climate change as a problem that is worthy of action, and shifts from climate change being in the ‘bad’ constellation to the ‘good’ constellation. This subsection discusses several examples of these shifts to illustrate their relationship with participants’ cosmologies: the underlying legitimation codes and constellations.

One of the interviewees, who had described climate change as “rubbish” near the start of the event, said that the event had made him realize that he was pro- climate change action but anti- carbon tax:

I guess subliminally I’ve always thought yes you do need to take action against climate change but it shouldn’t be made, political, it’s just that I didn’t, actually, *know* that I thought that, and the night actually brought that thinking out. So I was always you know I always try to be green, turn off the lights when you don’t need ‘em, put stuff in the recycling bin. ... Suddenly when that night came along I realized wait I am *for* climate change, ah, just not the tax side of things, that’s where everything sort of got mixed up and blurred (George).

While other participants described actions such as turning off lights and recycling as part of “doing your bit” for a “clean environment”, this participant also included them as part of taking action against climate change. These actions are carried out by a good citizen who does the right thing by “always try[ing] to be green”, rather than on the basis of their effectiveness in reducing emissions or other evidentially-based assessments. As such this construal of climate actions reflects weaker epistemic relations (ER-) and stronger social relations (SR+) relating to this participant’s personal attributes, identity, agency and responsibility: a *knower code* (ER-, SR+). The actions are also personal, simple, local and tangible; as described in section 4.3.3 on solutions, these attributes are reflective of stronger semantic gravity (SG+) and weaker semantic density (SD-): a *prosaic code* (SG+, SD-). In short, the climate change actions matched this participant’s (and the group’s) knower code and prosaic code.

In terms of constellations, the participant constructed climate change as an environmental issue requiring “do your bit” actions as belonging in the ‘good’ constellation. However, climate change as a “political” or a financial (“tax side of things”) issue belonged in the ‘bad’ constellation. The carbon tax marked the point at which things got “mixed up and blurred”: it signified a shift to dealing with climate change as a political and financial issue rather than an environmental issue.

Another example of climate change being recognized within the ‘good’ constellation occurred in a conversation about electric cars. Two participants said that they were interested in buying an electric car, “yet we both think [climate change] is a load of, of codswallop” (David), to which the other replied, “Well Tony Abbott’s right, get in and do the things internally, don’t worry about a tax” (Geoff). In other words, climate change is not “codswallop” and is deserving of action when the solutions are proposed by a trusted source and constitute tangibles rather than taxes. As in the previous example, this was also about ordinary people having agency to address the problem in the form of local, tangible solutions such as buying electric cars. The focus on agency and trusted sources reflects a *knower code* (ER-, SR+). The local and tangible nature of proposed solutions, in this case in the form of electric cars, and dismissal of the abstract, intangible carbon tax are reflective of a *prosaic code* (SG-, SD+).

In contrast, there was an example when a participant (Jim) in a small group conversation expressed his agreement with mainstream climate science and support for action, but then in the large group was told that he was wrong and retreated somewhat from his position. As an example of a successful climate change measure Jim started to describe nurseries' air intakes that "take the carbon monoxide gas and feed it to the plants", when another participant interrupted and established that climate change is all about carbon dioxide not monoxide. The effect was that Jim got told, in front of the whole group, that he did not know what he was talking about. Maintenance of good relations within the group and of Jim's identity as a trustworthy group member appeared to be compromised. Jim then changed the conversation to something that the others agreed with: the problems with wind power. In his only other address to the whole group he repeated others' comments rejecting climate responses, particularly the carbon tax: "climate change is an important thing on the agenda but how we attack it, that's another story" and climate action "affects Australian jobs and our work in the future, compared to um, other countries around us, which is the main polluters". In comparison to the talk about carbon monoxide and dioxide that could have been perceived as exhibiting a knowledge code, the carbon tax, Australian jobs and 'us' and 'them' countries were clearly underpinned by a knower code. In this way, the common ground between participants was restored when Jim shifted from a potential knowledge code to a knower code and changed focus from the aspects of climate change in the 'good' constellation to those in the 'bad' constellation.

The final example shows how a range of factors relating to participants' cosmologies played out in a conversation which is reproduced below. The conversation was principally between two participants whose earlier statements included that climate change is a "hoax to keep politicians in power" (David) and "an ego trip" for "lefty" politicians, with the scientific "jury still out" (Geoff):

1 (Alan laughs)

2 David (to Alan): Surely we want our Australian cows to let off less gas? (laughs)

3 Alan: Pardon? (laughs) We want our cows to let off less gas! That's what Shann's going to write, gas is one of the main things. ...We've gotta learn to let more- less gas out.

4 David (to Geoff): Are we are we, are we passing a *potential* problem onto our future generations?



5 Geoff: *Absolutely!* Yeah.

6 David: Should we take, some, sort of-

7 Geoff: It's too late for us mate.

8 David: Too late. (looks away).

9 Geoff: You've got more time than me, but um. I haven't got any of that time.

10 David: What about, sorry, what about this, you know the landfills. You know we chuck out all our rubbish they just fill up with stuff and there's (hands up fast, several times).

11 Alan: Methane gas.

12 David: [Methane gas, yeah.

13 Bob: [(to David) All the methane gas. (inaudible) breaking down, yeah. Some places they are utilizing it.

14 Geoff: We should harvest the methane gas.

Here David makes use of a range of resources to secure Geoff's agreement that climate change "absolutely" represents a potential problem and that "we should harvest the methane gas". These resources include using humor and securing group support, matching the group's knower code and prosaic code, and emphasizing personal or collective agency to deal with the problem:

- David finds an easy way in to a difficult question in turn 4: his speech follows a series of jokes and he also starts out with a joke (in turn 2). He seeks and receives support from Alan who has been laughing at the others' jokes;
- David begins and ends with specific examples (methane from cattle and from landfills) that are manifestations of more abstract concepts. He provides Geoff with something more immediate, local and tangible than "a potential problem" for "future generations", thus aligning with the group's *prosaic code* (SG+, SD-);
- In turns 4-6 and again in turn 10, David plays to the 'if-then' moral rule (if we contributed to a problem, then we should help to fix it), a recurring theme of the event. This is based on a *knower code* (ER-, SR+) grounded in personal responsibility and good citizenship;
- After Geoff dismisses his own personal agency in turns 7 and 9, David perseveres with the landfill methane example in turn 10. Another participant helps out to show that "utilizing it" is something that is already working, followed by Geoff's definitive statement of support in turn 14. This is clearly a "we" that relies on other people's

actions (a collective “we”): the solution that club members came to was not that they should stop “chuck[ing] out all our rubbish” but that “we” should harvest the methane. So David finds an example that circumvents Geoff’s apparent concerns about his own agency.

Thus, the conversation exemplifies the characteristics of climate change as it sits in the ‘good’ constellation, related to knowers who inhabit a moral universe and who perceive a high degree of personal or collective agency to deal with the problem. Unlike the previous example about carbon monoxide/dioxide, in this example the knower code was maintained, or at least things that could have been read as knowledge code, like methane gas, were wrapped within a knower code relating to personal responsibility and agency. In this way participants found a place for worthwhile climate change responses in the ‘good’ constellation.

#### **4.5.3 The importance of cosmologies**

The examples described in this section demonstrate the central role of participants’ cosmologies in driving the conversations. To be accepted, everything in the conversations has to fit the group’s dominant knower code and prosaic code and the constellations that are generated by those codes. Together they drive the points of agreement or alignment (as in the case of David and Geoff’s agreement about harvesting methane from landfills) and misalignment (for example Jim and Geoff’s exchange about carbon monoxide/dioxide). In section 4.3.3 on solutions, we saw the way that participants transformed the carbon tax from a knowledge code and rhizomatic code concept to one that was underpinned by a knower code and a prosaic code, with a name and a face. More generally, section 4.5.1 on constellations demonstrated the driving force of the legitimation codes, manifested in the way that participants sometimes assigned climate change to the ‘good’ constellation and sometimes to the ‘bad’ depending on the codes.

As a general rule, nothing happens in the conversation that does not match the codes, or if it does then it is perceived as being a glitch or an error. On the few occasions that someone strengthened the epistemic relations or weakened social relations and thereby ventured into what could have been interpreted as a knowledge code, the others either:

- tried to engage with it but could not adjudicate between their different opinions, as occurred when Jock, Geoff and Shann argued about the influence of humans (section 4.4.5); or

- rapidly turned the conversation back towards a knower code, as in Jock and Joe's response to "isn't the earth hotter?" (section 4.2.1); or
- treated it as symptomatic of someone being different to the rest of the group.

An example of the latter was "Louise is always disagreeing" (Alan), following Louise's many challenging questions such as: "But is [climate change] really keeping politicians in power? When you see what's happening now you can't tell me that Miss Gillard's gonna be there at the next election". Here Louise's argument against the climate change hoax challenged an idea that conveniently fitted participants' 'them' camp which included Gillard. By examining the merits of the argument and its logical conclusion Louise was strengthening epistemic relations. She also said, "That's a bit of a Robin Hood attitude" (about "Look after the children of today rather than the children of the future"), "if we don't get it right with this generation, it's going to be pretty lousy for the next few, isn't it?". By extending the boundaries of agency and responsibility to consider a few generations ahead and to act on their behalf, she went against the group's knower code and prosaic code about looking after current, local, tangible problems.

#### **4.5.4 Discussion**

The structure of participants' constellations is binary, with one constellation positively evaluated ('good') and the other negatively evaluated ('bad'). What determines whether things belong in one constellation or the other are the dominant legitimation codes of the group: a *knower code* and a *prosaic code*. The constellations are axiological, based on positive and negative judgments of value and personal alignment, rather than epistemological constellations based on explanatory power. Things that are personal, subjective, about beliefs and significant others (knower code) and that are concrete, local, common sense and simple (prosaic code) are positively evaluated, in the 'good' constellation.

As a generalized pattern, shifts towards accepting climate change tended to happen when participants matched their message to the group's dominant knower code and prosaic code and the constellations that are generated by those codes. In practice this happened when:

- people were portrayed as having agency to deal with the problem, either now or in the future;
- solutions were proposed or carried out by players within the 'us' camp (including participants themselves);

- they used simple, tangible, specific examples that were manifestations of more abstract concepts.

The first two of these match participants' knower code and the third their prosaic code. In this way it appears that the matching of legitimation codes was central to participants' shifts towards constructing climate change as a problem. In addition, there were two non-code related factors that appeared to play a role. The shifts generally occurred when there was:

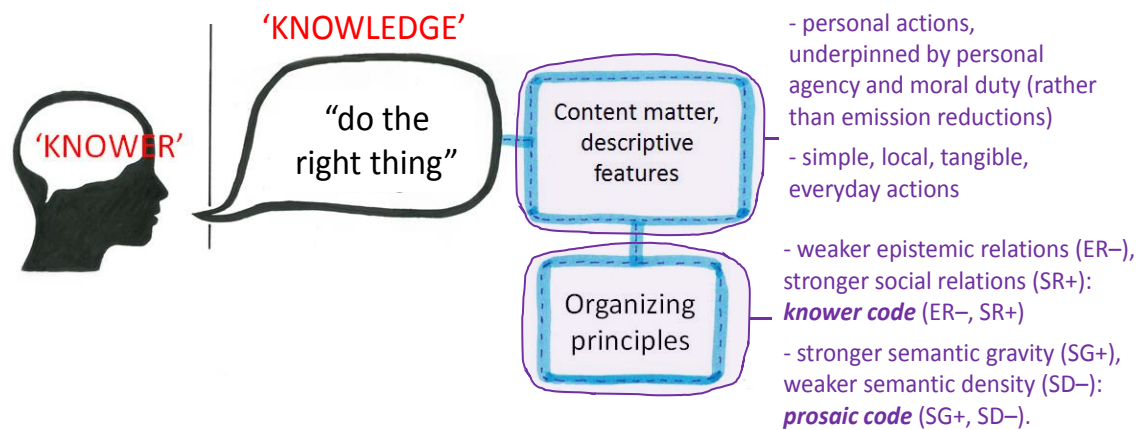
- group support for the person making the shift, often facilitated by humor;
- small group size and a 'private' format. Shifts mostly occurred in the small groups when researchers were absent (the shifts were heard only afterwards through recordings). Small groups seemed to be more informal with more use of humor and more canvassing of the possibility that climate change is a problem without the need for definitive statements that tended to feature in the large group.

#### **4.6 CONCLUSION**

This chapter reported on Rotary participants' constructions of climate change and the cosmologies that underpin those constructions. It demonstrated the ways in which over and over again, the same legitimation codes underlie the Rotary participants' constructions of climate change. These are a *knower code* and a *prosaic code*.

The opening section on the climate change problem described participants' constructions of climate change as being open to ordinary people's "views" and "opinions", based on their lived experience and the views of their trusted sources. In relation to climate change solutions, participants inhabited a binary world in which solutions were assigned to a positively evaluated ('good') or negatively evaluated ('bad') constellation. One solution in particular, the carbon tax, seemed to act as a 'lightning rod' condensing everything about climate change that they disliked or did not understand. That it was promoted by Labor and Greens and opposed by the Liberal-National coalition represented a clash with participants' knower code and 'us' constellation. Its abstract, intangible nature, reflecting a rhizomatic code, clashed with their prosaic code. In contrast, the solutions that participants supported rested upon the right type of person as a community-minded citizen doing "the right thing", reflecting a knower code, and they were simple, common sense, everyday, local and tangible, reflecting a prosaic code – a code match.

Returning to the diagrams presented in chapter 2, this chapter first described the content matter and descriptive features of the Rotarians’ statements, for example in their personal, local, tangible nature, and then analyzed the organizing principles of the statements, a knower code and a prosaic code. As will become apparent in the following chapters, identifying these organizing principles provides a way to compare ‘apples with apples’ – in this case to compare and contrast with the think tankers’ statements – and a basis on which to match communication and engagement approaches with the knowledge practices of these two quite different groups.



**Figure 4.1: Example analysis of both the content matter and organizing principles of a Rotary statement about climate change responses**

The analyses in this chapter demonstrate that while the binary structure of Rotary participants’ constructions is simple and their knowledge claims are epistemologically simple, the constructions are axiologically complex: they are the product of a rich and complex worldview or cosmology. This cosmology is based on an axiology where things that match participants’ knower code and prosaic code (code match) are positively evaluated, and things that exhibit other codes (code clash) are negatively evaluated. The central importance of the cosmology was demonstrated in the way that participants shifted between assigning climate change to the ‘good’ constellation when it matched their codes and ‘bad’ when it did not. Further, things which at first glance appeared to be based on a knowledge code (such as profession-based knowledge) were actually still based on a knower code and a prosaic code. On the occasions when someone strengthened epistemic relations towards what could have been interpreted as a knowledge code, the others either let it go because they could not adjudicate the

arguments, turned it back towards a knower code, or treated it as symptomatic of that person being different to the others. Thus, these analyses complement large scale, longitudinal studies such as Capstick et al.'s (2014) that identify shifts in climate change views "in concert with changing physical and social conditions", by identifying conversational shifts that occur in concert with changes in legitimation codes, for example from a code clash to code match.

The following two chapters (5 and 6) examine the think tankers' conversations and analyze their legitimation codes, ahead of a comparison with those of the Rotary participants in chapter 7. The present chapter's findings about code match and code clash would appear to have implications for CCC&E approaches more broadly, as explored in chapters 7 and 8.

## CHAPTER 5: THINK TANKERS' VIEWS ABOUT CLIMATE CHANGE

### 5.1 INTRODUCTION

This chapter is the first of two that analyze think tankers' conversations about climate change in the roundtable and interviews conducted for this research. It addresses research question 1 about how participants constructed climate change and what underlies the differences in their statements. This is achieved by analyzing the organizing principles of the statements in terms of their legitimation codes. The codes represent a systematic way of comparing and contrasting statements made by different groups, and so the code analyses contribute towards the larger research aim of explaining the basis of differences in the knowledge practices of participants in the climate change debate. Chapter 6 then addresses research question 2 by examining how the think tankers negotiated their differences and whether they were able to agree on responses to climate change.

As described in chapter 3, the five think tank participants were chosen to represent a range of political ideologies:

- broadly 'left' or 'progressive' (Miriam Lyons, Center for Policy Development);
- center-left (David Hetherington, Per Capita);
- centrist or center-right, self labelled as a "conservative" (Sam Roggeveen, The Lowy Institute for International Policy);
- 'free market' (Tim Wilson, Institute of Public Affairs);
- a topic-centric, ostensibly non-ideologically aligned view (John Connor, The Climate Institute).

However, a central theme of the chapter is that political ideology is not the only basis on which think tankers form their views: empirical evidence with stronger explanatory power is also important.<sup>17</sup> The relationship between the two was raised in a public forum called *Battle of the*

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<sup>17</sup> 'Ideology' has been a highly contested term in the social sciences and humanities for many years. As mentioned in 1.4, I use the term in this thesis because the think tankers themselves used the term. I note that 'ideology', in all its forms and meanings, is connected to attributes of knowers: their class, race, gender, politics and so on. My analysis is limited to analyzing the think tankers' statements about 'ideology' using the LCT tools of Specialization and Semantics.

*Think Tanks*<sup>18</sup> when the facilitator asked how think tanks can claim to be “evidence based” while “coming up with very different answers about the same issues using the same data”. The participants replied: “Think tanks have to be grounded in values” (David) and:

Public policy is ultimately about politics and it’s about values. Values inform not only what you see as the solution but also what you see as a problem in the first place. ...You cannot have values-free analysis because it’s always a choice about which issues and which data are in or out (Tim).

They also asserted that in contrast to political parties that are required to compromise, think tanks “advocate for a more perfect world in their worldview” (Tim). Another participant summed up:

Should we be ideological or evidence based? I think in the end you need both. Of course you shouldn’t be blind to evidence, just an ideologue, but if you are completely without any ideas then it’s just empty pragmatism driven by the latest opinion polls (Oliver).

These comments illustrate the way in which think tankers’ policy prescriptions are informed by their ideology, in that it provides a lens through which to view the evidence. This explains how they can use the same data to come up with very different answers. In these conversations, terms such as “ideology”, “politics”, “values” and “worldview” relate to things that are subject to taste and choice, and that have no right or wrong answers only different interpretations and views of the world. On the other hand, “evidence”, “analysis”, “data” and “polls” are things with explanatory power that are testable and falsifiable. The comments emphasize the role of “values” in “analysis”, and the need for balance between the poles of “ideology” and “evidence”. The following sections identify the various expressions of ‘ideology’ and ‘evidence’ in think tankers’ statements and analyze their underlying legitimization codes. The literature suggests that there might be a tension between ‘ideology’ and ‘evidence’ insofar as the climate science (‘evidence’) implies the need for rapid and large-scale action that may be ideologically incompatible (e.g. Campbell and Kay, 2014). This chapter and the next investigate the extent

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<sup>18</sup> *Battle of the Think Tanks*, held in Sydney in 2011, featured three of the roundtable participants: David Hetherington, Miriam Lyons and Tim Wilson, together with Oliver Hartwich from the Centre for Independent Studies. This reference was chosen as it explicitly addressed think tankers’ valuation of “ideology” and “evidence” and the relationship between the two, something that was not found in other sources.



to which the think tankers weakened the ideological element of their positioning when it was incompatible with the scientific implications.

The following sections of this chapter examine participants' constructions of the climate change problem (5.2) and solutions (5.3) and analyze their legitimation codes. Section 5.4 looks at the basis on which participants say they form their views about climate change, relating to 'ideology', 'evidence', and 'ideology' and 'evidence' together.

## **5.2 THE CLIMATE CHANGE PROBLEM**

The first part of this section describes how participants constructed climate change itself, that is, physical climate change as known through climate science, and their acceptance or otherwise of the science and its implications for responses. The second part examines the way that participants construct the climate change issue or debate.

### **5.2.1 Physical climate change**

The few times that participants talked about climate change itself, the conversation revolved around objective measures of the physical world such as degrees warming and parts per million of greenhouse gases, and about physical impacts that can be monitored and evaluated. Climate change was described as being about causation and effect, about increased greenhouse gas emissions causing temperature increases and impacts such as hurricanes in the United States and bushfires and droughts in Australia. As well as describing impacts such as droughts and bushfires that are personally observable, they described those that are only known to participants through science, such as melting permafrost. They discussed global as well as local causes and impacts of climate change, and those in the future as well as the present.

The think tankers constructed climate change as a phenomenon with its own physical presence and impacts, as changes in the physical world, not simply about people's perspectives changing. That is, climate change has an existence independent of social constructions, and its existence and characteristics can be known about through climate science. Unlike the Rotary participants, the think tankers did not suggest that climate scientists' motives or politics played a role in their research findings about climate change.

In terms of participants' own statements of acceptance or otherwise of physical climate change and its implications, all agreed at the start of the roundtable that they were "broadly accepting

of sort of mainstream science... [of] anthropogenic climate change, as you know real and potentially underway” (Miriam). However, this area of apparent agreement became more complicated as the event went on. Discussions around the details of an “acceptable” level of degrees warming and its implications for the speed and scale of responses revealed major differences in participants’ levels of climate literacy as well as their degree of comfort in accepting the science and its implications. When one of the participants pressed the others on whether they had “a view on, for each of us, on what is acceptable warming, or you know warming within which we can adapt” (John), three of the others said that they did not know (Tim, David, Sam). The answer, that “two degrees is an absolute guardrail and one-and-a-half is still risky” (John), was said to have implications for the speed, scale and breadth of action required to minimize these risks. It became apparent that delving into the details of the climate science made agreement more challenging for some participants because of the degree of top-down intervention that might be required to achieve these goals (see section 5.3 on solutions, below).

Some participants held climate science to be the primary source of legitimate knowledge about climate change, and as such argued that it should inform the goals or targets for climate responses. This is demonstrated in the following two examples:

Based on the most recent science, ... [what is required is] a rapid shift to essentially zero carbon economy... and some level of drawdown of the existing excess level of CO<sub>2</sub> in the atmosphere (Miriam).

Similarly:

We’ve operated throughout the emergence of humanity and human civilization up to 300 parts per million [of carbon dioxide], and now at 392 and climbing. Our view is that it’s 350 and then ultimately back down to 300 is where we need to be (John).

Here, climate science provides the basis for these participants’ goals of returning to particular levels of carbon dioxide and provides a yardstick against which to measure progress towards these goals. However, as noted above, the other three participants acknowledged their lack of basic knowledge about details such as ‘safe’ levels of greenhouse gas concentrations and degrees of warming and did not propose any particular goals for action based on climate science parameters.

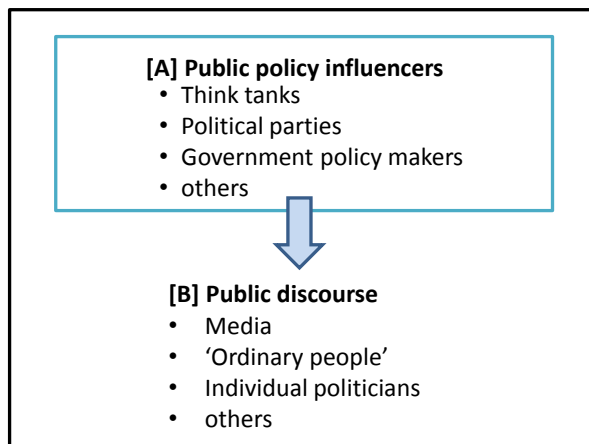
### 5.2.2 The climate change debate

The way that participants constructed the climate change debate was quite different to the way they constructed physical climate change as known through climate science. In particular they described how ideological and psychological factors influence people’s acceptance of climate change itself and their evaluations of climate change solutions, in a multitude of ways.

During the roundtable participants constructed two main groups of players in the climate change debate in Australia, as depicted in Figure 5.1. These were:

- [A]: Public policy influencers: including think tanks, political parties, government policymakers and others who develop and evaluate climate change policy and responses.
- [B]: The media, ‘ordinary people’ (“most Australians”), individual politicians and others who make up the public discourse or debate and who react to proposed or implemented climate change policy and responses.

Participants described the flow of communication and influence from [A] to [B]; two-way interactions between [A] and [B] were not discussed in the roundtable or interviews. Hence the one-way arrow in Figure 5.1 is intentional.



**Figure 5.1: Players in the climate change debate in Australia, as portrayed by think tank participants**

Participants constructed the climate change debate differently in relation to each of these two groups. They also identified some similarities and links between the two.

**[A] Public policy influencers**

Participants identified that in Australia, acceptance or rejection of climate science amongst public policy influencers is at least partially dependent on one's political orientation or ideology. One participant suggested that acceptance of climate science "tend[ing] to run along ideological lines" might have something to do with "the effectiveness of different types of responses" (Miriam, interview). In the roundtable this participant was more explicit in identifying a particular political ideology, market liberalism, as a key factor in the rejection of climate science:

"I think there have been a bunch of you know passionate market liberals, who've looked at climate change, looked at the fact that the reaction to it was likely to be more state intervention or regulation or creation of trading schemes or taxation or whatever, rather than less, didn't like the look of that, ... I think probably would have been pretty motivating to search extra hard for the doubt on the climate science. ...[And then they said] even if humans are the main cause of it, we're never going to get enough global action, or you know it's not really in *our* interests to act first so, *bugger it*, let's prepare for adaptation, isn't it convenient that the most likely way that we'll be able to adapt is to let the market do its thing because it's the best way of, you know reacting to any sudden and surprising change. ...It would be a worldview kind of consistent way to go through the process of reacting to climate change as a problem." (Miriam).

In response, the participant who self-identified as being a market liberal acknowledged that his ideological "view of the world" did play an important role in evaluating climate responses:

I think the motivation for the different components of your narrative don't all line up perfectly at all, but ...even with myself I acknowledge that part of my resistance to some types of policy instruments is very much driven out of my free market view of the world (Tim).

Another participant suggested that these divisions on political lines had led to climate change becoming a partisan political issue in Australia:

I think we're mining the culture wars. I think that we're people coming at this issue out of cultural trenches particularly after the breaking down of the sort of bipartisan consensus that was there under Turnbull and Rudd (John).<sup>19</sup>

***[B] The public discourse***

Participants construed the public discourse as being un conducive for think tankers and others to have constructive relationships and evidence-based conversations, working together to find solutions. In particular, they characterized the public discourse as lacking evidence and being too ideological or too interested in meeting social desires (for example, for entertainment) at the expense of dealing with the issue.

Participants singled out the media as perpetuating this kind of discourse. They suggested that it encourages think tankers and others to battle out their differences, "to go hammer and tongs at it, for public entertainment" (Miriam) and it airs the "front page battle that goes on between, highly politicized, partisan positions" (David). The "various kind of poles of the media" were said to produce an "echo chamber" effect that reinforces existing polarizations (David). A contrast was made between the stronger evidential basis of attitudinal surveys, and the warring poles of the media with their stronger ideological basis: "the gulf between what the media has us believe that most Australians are concerned about in these matters and what broader community and attitudinal surveys tell you" (David). Participant's construed the media as being more interested in entertainment in the form of the warring personalities in the debate, than in dealing with the issue.

More broadly and perhaps in contrast to the battle theme, public debate in Australia was characterized as being "frustratingly polite" with "a lot of deference to position, and age, and to experience" (Sam). This is another example of the ways in which social factors were said to take precedence over evidential factors.

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<sup>19</sup> In 2009, Malcolm Turnbull was Liberal Federal Leader of the Opposition and Kevin Rudd the Labor Prime Minister of Australia. Turnbull had expressed support for Rudd's proposed emissions trading scheme soon before both leaders were deposed and replaced by Tony Abbott and Julia Gillard, respectively.

Not specifically in relation to the media but more generally in public discourse, participants identified a lack of knowledge about climate science. The high risk of catastrophic impacts associated with seemingly small amounts of warming (0.8, 1.5 and 2 degrees) is “an element of the debate that’s actually not being addressed properly” (John). Another participant mentioned the results of a survey showing that most Australian politicians thought four degrees of warming would not be problematic. In particular, ‘ordinary people’ were characterized as being disengaged from climate science. Only “a very, very, very small group of the community” (David) read the climate science or even mainstream media reporting of it. The “strength of the signal” communicating the urgency of climate change has not been enough to overcome resistance to action that is based on a response of “why do I have to deal with this, my life’s difficult enough” (David). Furthermore, communicating the climate science alone is unlikely to persuade people of the seriousness of climate change because “people aren’t persuaded by argument, they’re persuaded by their lived experience” (Sam); “it’s these big, signature events, whether it’s [Hurricane] Sandy or a big drought in Australia that that kind of connects the dots for people” (David).

### ***Similarities and links***

While participants generally distinguished between the characteristics of public policy influencers and lay people, there were also a few features said to apply to both groups. For example, participants recognized that it is not only ordinary people whose views are influenced by psychological factors. They identified various psychological barriers to dealing with threats such as climate change, the “various coping mechanisms and biases and filters” that represent “everyone’s, our own systems of denial” (John) because we would prefer that the issue did not exist. Another participant described “the confirmation bias around what doubt there was out there, in the scientific community, you know we all have that, that’s something we, you all experience. I know that I experience it too” (Miriam). More generally, they suggested that it is difficult for individuals to reconsider or change their opinions about climate change and other policy matters because these are so closely tied to their sense of identity:

People find it very difficult to separate their opinions from their view of themselves and their view of others. So opinions on policy matters are not up for negotiation, they’re actually a core aspect of your character (Sam).

In addition, participants identified a flow-on effect from the way that public policy influencers and politicians were split along political ideological lines to the public discourse amongst 'ordinary people' being split along similar lines. The political divisions had made climate change into a "tribal signifier" that makes some groups of people disinclined to accept climate change and climate responses: "As soon as that acceptance of the science stops being a bipartisan position, acceptance of the science goes down, because people don't want to think differently to the people they identify with" (Miriam). Participants also identified that there is a large percentage of the general population who follow their "cultural leaders" and "for whom the messenger matters a lot" (John). Spanning their descriptions of different groups of people was a sense of the ubiquitous nature of ideological and psychological factors, the driving forces behind the climate change debate.

### **5.2.3 Analysis**

The above discussion suggests that participants constructed the field of climate science and the climate change issue or debate as two kinds of knowledge practices with different bases of legitimacy. This section brings together these two sets of constructions and analyzes their organizing principles in terms of specialization codes and semantic codes.

#### ***Climate science***

Participants described climate science as concerning processes of causation and effect in the physical world, such as increases in the concentrations of greenhouse gases and consequent warming, with physical impacts that can be objectively monitored and evaluated. This constitutes an evidence base with relatively strong explanatory power. In terms of specialization codes, it thus exhibits stronger epistemic relations (ER+). There was also no mention of climate scientists' motives or philosophical or political alignments – scientists' personal attributes were not held to be important, signifying weaker social relations (SR-). These are all constructions of the field of climate science as being governed by stronger epistemic relations (ER+) and weaker social relations (SR-): a *knowledge code* (ER+, SR-). While individual participants are not case studies in themselves, it is interesting that there were variations in the degree to which individual participants engaged with the climate science. Some used concepts such as 'parts per million of greenhouse gases' or 'degrees warming' as the foundation for their goals and responses while others did not. Despite their differences, the finding about the underlying specialization code remains the same. The commonality

across all participants was that they constructed climate change as a knowledge code, regardless of its substance or its implications for action.

In terms of Semantics, participants constructed climate science as being about intangible abstractions such as parts per million of greenhouse gases and about global systems and impacts. These are highly context-independent concepts removed from the local and concrete, signifying weaker semantic gravity (SG-). Participants also constructed climate science as being highly complex, studying interconnected human and natural systems: stronger *semantic density* (SD+). Together the two elements indicate that participants construed climate science as being underpinned by a *rhizomatic code* (SG-, SD+).

### ***The climate change debate***

Participants construed [A] public policy influencers, and [B] players in the public discourse, as having different bases of legitimacy. In discussing their own and other public policy influencers' discourses about climate change, participants identified varying degrees of influence of "ideology" or "evidence" or a combination of both (explored more fully in section 5.4 on the basis of knowing about climate change). For the most part, they talked about ideological viewpoints as being problematic if they were so prominent as to obscure the evidence, lead to rejection of climate change or effective responses, or erode consensus and common ground. For example, rejection of the science and of climate responses that involve government intervention by "passionate market liberals" was portrayed as being an ideological convenience, allowing them to retain their strong preference for minimal government intervention. The emphasis on ideology reflects stronger social relations (SR+), in this case reflecting faith-based or identity-based preferences. Rejecting or downplaying the science reflects weaker epistemic relations (ER-). These are constructions of public policy influencers' role in the climate change debate as being underpinned by ER-: a *knower code* (ER-, SR+). However some participants also advocated for the integration of evidence (ER+) and ideology (SR+) . They described putting this into practice by basing their proposed solutions and goals on both their political ideologies and the science (for example in terms of a parts per million or degrees warming goal that was factored into their choice of responses). In these cases they constructed their ways of operating as being generated by an *elite code* (ER+, SR+) in which both evidence and ideology are strongly emphasized. Finally, one participant described his organization as proposing climate responses only on the basis of evidence of effectiveness,



reflecting stronger epistemic relations (ER+), and being non-ideological, reflecting weaker social relations (SR-): a *knowledge code* (ER+, SR-)<sup>20</sup>.

In summary, participants' constructions of themselves and other public policy influencers indicate a range of specialization codes (knower code, elite code and knowledge code) being realized in different contexts and by different participants. The different contexts and shifts in these codes will be examined further in the following three sections of this chapter.

In relation to Semantics, participants painted a 'big picture' overview of the climate change issue: situating it within the 'culture wars', not in a vacuum but interconnected with other social trends and drivers. They also recognized the (at times) unconstructive influence of the media, politics and the broader public sphere, in other words the think tankers' milieu, in shaping the nature of their practice and their debates. They proposed complex, interconnected reasons for why the issue is so challenging, ranging from individual psychology and group or "tribal" identity to more theoretical, ideological concerns that shape the debate and that in turn, influence ordinary people's perceptions of the issue. Concepts such as "tribal leaders" and an "organized system of denial" were complex, intangible and abstract. The abstract and intangible nature of these concepts reflects weaker semantic gravity (SG-); the complex, interconnected, big picture understanding reflects a high degree of condensation of meanings within a concept such as 'the climate change issue', or stronger semantic density (SD+). Thus, participants' conceptions of the issue were underpinned by a *rhizomatic code* (SG-, SD+).

In relation to the public discourse, [B], the think tankers' described the mainstream media as being primarily interested in personalities and entertainment. This corresponds with a stronger interest in relations between actors in the issue, or stronger social relations (SR+). Further, the media discourse on climate change was said to lack evidence, thus reflecting weaker epistemic relations (ER-). Together these attributes signify that participants constructed the media discourse on climate change as characterized by a *knower code* (ER-, SR+). Similarly, their portrayal of lay people as lacking an understanding of climate science signifies a weaker evidence base, or weaker epistemic relations (ER-). Further, the issue was said to be about

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<sup>20</sup> John Connor, The Climate Institute. However, the solutions John proposed in the roundtable tended to align with a pro-intervention constellation as further explored in section 6.2 on constellations.

“more than the science”; instead, lay people know about climate change through ‘significant others’, trusted sources such as their “tribal leaders”. These significant others form the cornerstones of a way of knowing that is built upon stronger social relations (SR+). In this way lay people were portrayed as operating by a *knower code* (ER–, SR+).

In terms of Semantics, lay people were said to know about climate change through the lived experience of extreme weather events such as droughts and cyclones. As local and tangible, concrete phenomena, these exhibit stronger semantic gravity (SG+). In the form in which they are known about through lived experience, these phenomena are relatively simple, one-dimensional concepts, that is, they exhibit weaker semantic density (SD–). Thus participants constructed lay discourse about climate change as exhibiting a *prosaic code* (SG+, SD–). It is interesting to note that the think tankers’ constructions of lay people’s knower code and prosaic code are consistent with the legitimation codes actually exhibited by the Rotary participants (chapter 4).

In summary, the participants constructed climate change itself and the climate change debate as having different bases of legitimacy. They portrayed climate science, concerned with physical climate change, as being governed by a knowledge code and a rhizomatic code. The climate change issue or debate was construed as being governed by different codes in different forums. Specifically, they constructed the public debate as being dominated by a knower code and a prosaic code. Thus, there are code clashes between the science and the public debate. The think tankers indicated that when engaging in the mainstream media discourse they followed suit by matching codes. Within public policy circles, for example in communicating with each other or developing responses to climate change, their descriptions suggest that they operate by more than one specialization code: in some contexts a knower code, in others a knowledge code, and still others an élite code.

The commonality across the think tankers lay in the dimension of Semantics: the rhizomatic code that they shared. This was reflected in their fluency in the abstractions of climate science (even if they differed in their knowledge of important details) as well as in political ideology, and their ability to relate the implications of one to the other. In contrast, there were only a few times when the focus of their conversations was about simple, local, tangible things, in other words underpinned by a prosaic code. In general, these were either when they were

constructing the world of lay people and mainstream media, or when they were giving examples of more complex, abstract (often ideological) concepts. These shifts represent movements in Semantics: from concepts that are highly condensed and context independent to those that are more simple and context dependent. The implications of these movements will become more apparent in section 6.1 on participants' attempts to find common ground.

### **5.3 CLIMATE CHANGE SOLUTIONS**

This section explores the solutions that participants proposed, particularly to address some of the problems of the climate change debate as identified in the previous section. At first glance, these problems and solutions seemed to correspond to endless combinations of being more evidence based, more ideologically based, both or neither, and with stronger complexity and weaker context-dependency, or vice versa. However, through the LCT analysis it became apparent that the various problems and solutions tended to fall into one of three overarching types that are referred to throughout this section. Their basis of differentiation resides in three combinations of specialization codes, as will be explained in section 5.3.4 (Analysis). The three types of problems and solutions are:

1. The problem resides in a lack of evidence and an unconstructive ideological battleground; the solution is to strengthen the evidence base and to either lessen the influence of ideology or retain ideological differences and argue for differing climate responses with climate science as the starting point.
2. The problem is a single-minded focus on communicating the climate science or reducing emissions without attending to social (ideological and psychological) factors; the solution is to attend to those social factors.
3. The problem is opposition to climate responses from those with different political ideologies who do not necessarily accept climate change; the solution is to find common ground on responses that they can agree on (without being contingent on their acceptance of climate change).

The analysis and reporting of participant's solutions is organized in three subsections, [A], [B] and [C] corresponding to the way in which the participants segmented the climate change debate by 'players', as described in section 5.2.2:

- [A]: Public policy influencers : including think tanks, political parties, government policymakers and others;

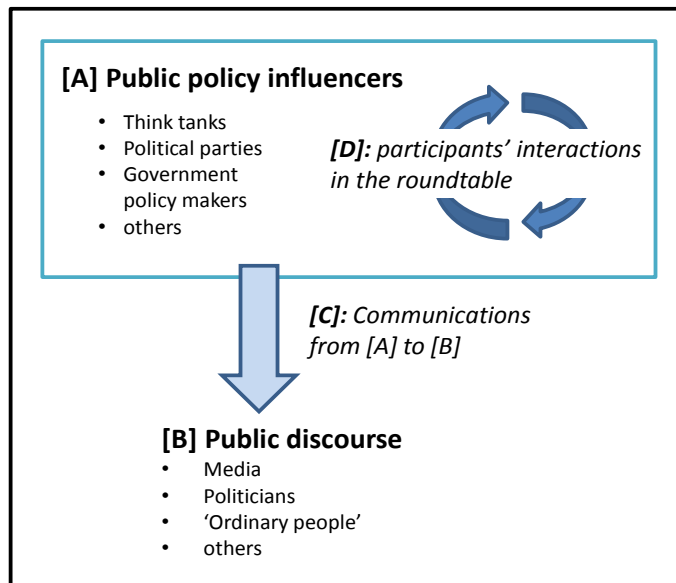
- [B]: The public discourse or debate: the ‘lay’ discourse about climate change in the media, ‘ordinary people’, individual politicians and others.

Participants also discussed problems and solutions that related to:

- [C]: Communications from [A] to [B].

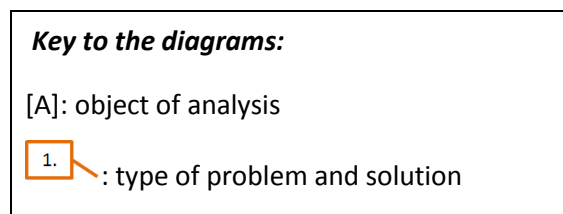
A further area of analysis, [D], the interactions between participants in the roundtable, is discussed in section 6.1. Amongst other things it describes how participants negotiated their differing ideological positions or ‘constellations’ and the code shifts they made, and examines how these processes related to success or failure to find common ground.

Figure 5.2 depicts the four objects of study, [A] to [D]. The problems and solutions identified by participants in relation to [A] to [C] are described in each of the following subsections.



**Figure 5.2: Objects of analysis in this study, [A] to [D], based on participants’ identification of players in the climate change issue**

At the beginning of each subsection, a diagram based on Figure 5.2 is provided to orient the reader to the relevant object of analysis, [A], [B] or [C], as well as to the type of problem and solution proposed by participants, 1, 2 or 3. Thus, the key to the diagrams is as follows:

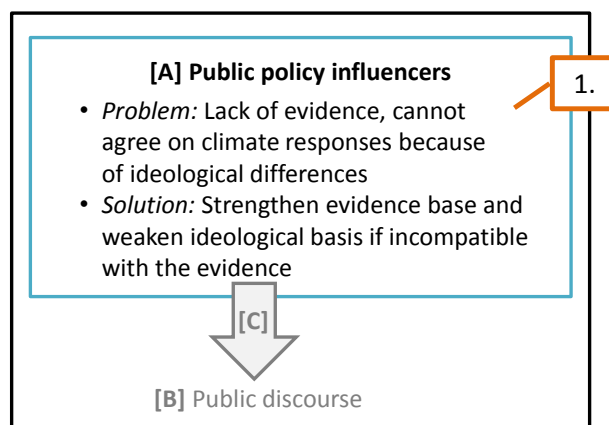


Most of this section focuses on the balance between ‘ideology’ and ‘evidence’ identified in section 5.1 because this was the area of most discussion and difference between participants in their identification of problems and solutions. On the other hand, the thing that all participants shared was a rhizomatic code (see section 5.2.3). The interconnected nature of the think tankers’ discourse became apparent when I tried to follow a similar structure to the previous chapter on the Rotary participants and found that it was impossible to describe think tankers’ solutions in isolation of the problem they were addressing. Whereas the discrete entities such as wind turbines and the carbon tax that Rotary participants talked about are able to stand alone as relatively unambiguous concepts, the think tankers described complex, abstract, interconnected concepts in each problem and solution that were mainly focused on resolving the problems of the climate change debate. This complexity means that the full meaning of a solution only becomes apparent when describing it together with the problem it addresses. For this reason, each of the following subsections briefly outlines the problem and its aspects that participants proposed would be improved by particular solutions.

### 5.3.1 [A]: Public policy influencers

Participants talked about three quite different types of problems and solutions in relation to public policy influencers’ development of climate responses and their interactions with each other on the climate change issue. These are discussed in each of the following subsections, with a diagram for each one to indicate the type of problem and solution.

#### ***Strengthen ‘evidence’, weaken ‘ideology’***



The think tankers suggested that the way public policy influencers operate could be improved if their positions were more evidence-based and less ideologically-based. The types of specific problems and solutions discussed in the roundtable ranged from improving public policy influencers’ interactions and dialogue, to acceptance of climate change itself, to climate

responses. These examples were about participants recognizing when their proposals had become too ideologically based, and proposing that the way forward lay in taking climate science as the starting point for reassessing one's position and preferred responses. The ideological basis must be weakened or compromised on if it is inconsistent with the evidence.

This type of problem and solution was expressed in a number of examples in different arenas. In the case of improving the state of public policy influencers' interactions with each other, one participant described the current pitfalls of "playing our bit in vaudeville" which required "separating your personal from your public persona. ... we do sometimes get too deeply embedded in that" (John). While "there does need to be a calling to account and bearing witness" of those people promoting denial of climate change, "you also need to leave open the door of dignity for people to come across" (John). Forums in which to practice this were also needed. In their reflections on the roundtable, participants said it had been a forum in which they suspended some of the 'tribal' battle, to weaken ideology and explore options and implications, both ideological and evidential. They noted "the gulf between what a small conversation like this amongst people who have different views across the spectrum looks like relative to the kind of front page battle" in the media (David), and they "put behind our tribalist camps as much as possible ...to try and have a discussion around where we got to, between our different views" (Tim). Another participant had expected a "reasonably ideologically purist approach" but was impressed by how "technocratic" the roundtable turned out to be (Sam). The above statements delegitimize the "tribal" or "ideologically purist" battle, and valorize more rational and "technocratic" assessments of climate change and proposals for responses.

A further example that demonstrates weaker ideological basis and stronger evidential basis as the solution relates to participants' competing opinions about the motivations of those who reject climate science. One view was that particular ideological or psychological factors tended to be incompatible with and lead to rejection of climate science (Miriam). In contrast, another participant largely dismissed this effect:

"The first proposition of most deep skeptics is that climate change does happen but the debate is about how much is being caused by man ...they acknowledge yes man can play a part, but is it the core driver and look at different trends and they have different evidence and arguments about why they think that's the case. ...If you don't think Bob Carter and

Ian Plimer genuinely believe what they believe ...they aren't necessarily market fundamentalists or any term that people want to use" (Tim).<sup>21</sup>

In other words, Carter and Plimer are not ideologues, they are using "trends" and "evidence" to determine the extent to which climate change is anthropogenic, and theirs are genuine evidence-based, not ideologically-based, dissensions. So on one account, climate science dissenters reject the science on an invalid ideological basis, while on the other, they have a legitimate, evidence-based alternative interpretation of the science. Despite this difference of opinion, in both cases there is an implicit assumption and agreement that it is a lack of evidence that is problematic, and that the legitimate approach is to base climate change positions on the evidence.

In relation to climate responses, participants noted the tendency for people to reject the evidence about the efficacy of various responses when that evidence hits an ideological incompatibility, as described in section 5.2.2, and consistent with the findings of Campbell and Kay (2014). The solutions that participants proposed revolved around a willingness to weaken the ideological basis if it is in conflict with the evidence. One participant said she would be willing to do this, to "put on hold" her "social concerns" and even shift to the opposite political ideology if it were more compatible with effective climate responses:

You look at what the science is telling us about the scale and the speed of change required and I don't think it's just my sort of social democratic tendencies that are telling me that we're going to need a mix of very rapid market response and sort of fairly interventionist government mechanisms. ... Because on the other hand I am so concerned about climate change that I would be quite happy to put some of my other social concerns on hold, if it meant we were able to deal with climate change, if the best way of solving climate change was to set up a bunch of public private partnerships that socialized the risk and privatized the gains, that you know Macquarie Bank was building an entire new energy system, so be it, you know if that was what it took! But I suspect that there is something about a society ...that doesn't have a completely vast gap between different groups in society, that would make that willingness to do that kind of collective investment on that speed, more likely (Miriam).

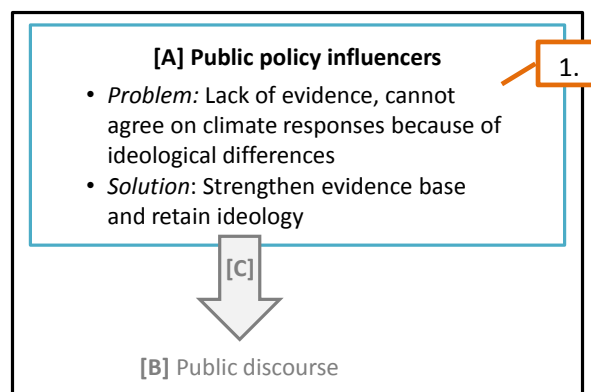
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<sup>21</sup> Bob Carter and Ian Plimer are Australian geologists and prominent climate skeptics.

This participant also explained that her conclusion “that you have more willingness to make environmental investments in societies that are more equal” was based on Wilkinson and Pickett’s (2009) research findings. That is, the evidence supports government intervention to make societies more equal and thereby supports her ideological position. Had the evidence been different she asserts that she would have been willing to change her ideological preferences to be compatible with the evidence.

In a similar vein, in the interview the same participant suggested running a separate exercise with think tankers, a hypothetical scenario of being in government and requiring each other’s votes, and asking “what would you be willing to compromise on? ...to offer up things that might go against our core values, just saying if it were the only thing that allowed us to make progress to deal with the issue adequately” (Miriam). Here, compromise means weakening the ideological differences and encouraging people to agree on a way forward, thus attending to the social aspects of the problem. Further, based on the co-text, “deal with the issue adequately” means the widespread and urgent emission reductions that are suggested by climate science, which attends to the evidential or epistemic aspects.

**Strengthen ‘evidence’, retain ‘ideology’**



In a variation on the previous theme, participants recommended solutions that were about strengthening the evidence base while maintaining (rather than weakening) their ideologies as foundations for devising and evaluating responses to climate change. These solutions were generally about educating fellow think tankers and other public policy influencers about the climate science, and finding ways to integrate science and ideology in the development of responses.



The think tankers themselves admitted that they should have had more knowledge of climate science. One described it as “basic knowledge I feel I probably ought to have and embarrassed that I don’t” (Sam). Another suggested that the science should inform their “top down” policy diagnoses and prescriptions:

“I consider myself to be closer to the debate than someone walking down Broadway here<sup>22</sup> and yet I don’t have a command of those details [about climate science] and I can’t imagine how it’s possible to get a really good handle on this top down without a command of those and many other details” (David).

The way to achieve this, said another participant in the interview, is to “do some serious education on the latest climate science ... amongst the sort of centrist and center-leftish voices of influence” so that they “recognize what that means for the action that should be taken based on their values” (Miriam). In other words, their preferred course of action should be informed by both “their values” and “the latest climate science”. This interviewee also described her idea of holding a “public debate with the IPA, and the CIS and CPD and The Australia Institute<sup>23</sup> or something, and saying, OK, let’s take the IPCC as gospel, how would we with our view of what works, respond to that ...each argue for our responses to it based on our own values and worldviews, with [the science] as a baseline” (Miriam).

More specifically on engaging conservatives, awareness of “catastrophic change” could potentially change the perspective of a “rational, open-minded” conservative “if acting slowly and incrementally actually came with a significant risk of radical, civilization threatening change. ...[Sam’s] worldview is a conservative one, but what conservative *means* could be changed by awareness of the facts” (Miriam). In other words, how that conservatism translates into preferred climate responses and the speed of response could be modified by awareness of the implications of climate science. Another interviewee (John) spoke in similar terms about getting conservative public policy influencers to take a “risk management” approach, to allow the science to inform their proposed climate responses. These recommendations hinge on

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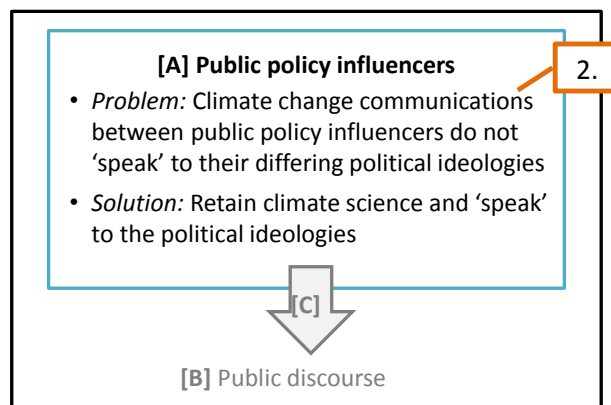
<sup>22</sup> Broadway is a main road adjoining the roundtable venue in central Sydney.

<sup>23</sup> These four organisations are Australian think tanks from across the political spectrum. The acronyms stand for Institute of Public Affairs (IPA), Centre for Independent Studies (CIS) and Centre for Policy Development (CPD).

public policy influencers becoming more willing to allow the evidence to inform how their ideologies are *realized* in preferred responses.

### **Recognize ideological implications**

The second type of problem concerned public policy influencers having a firm scientific emissions-reduction base but failing to adequately take account of the ideological implications of climate responses. Participants proposed two quite different solutions to this problem. One was to ensure that they retain the climate science as well as ‘speaking’ to the different ideologies. The other was to strengthen the ideological basis, even for this to take precedence over emissions reductions if the two elements were in conflict. The first of these is depicted in the diagram below.



Previous subsections described participants’ portrayals of some public policy influencers as failing to take heed of and fully realize the implications of climate science. Participants also identified the opposite problem: a failure of public policy influencers to take heed of others’ ideological positions, and to ‘speak’ to these. This situation becomes problematic when people reject the science or climate responses that are perceived to be incompatible with their ideological positions, as mentioned in section 5.2.2 on the climate change issue.

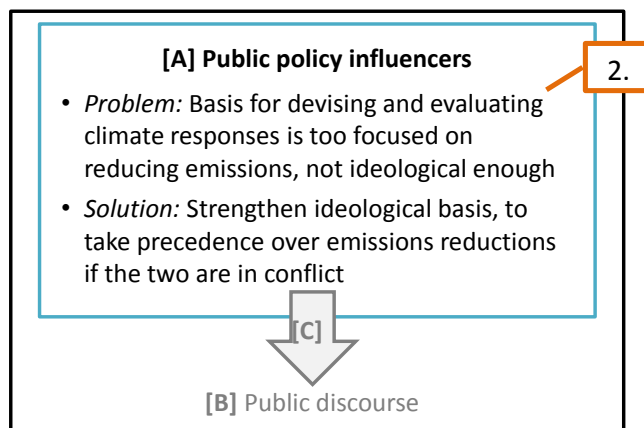
To address this problem, participants recommended demonstrating to public policy influencers coming from different ideological viewpoints that climate change responses could be compatible with their ideological preferences. For example, in the roundtable, one think tanker emphasized that his proposed solutions, unlike those of some “greenies”, could fit within a free market, economic growth model (John). This participant also recommended tailoring climate change communications to the audience’s ideological viewpoints while still communicating the gravity of the situation as per climate science. In the example below, this

translated into evoking the conservative aversion to human “gamble and experiments” and “recklessness”:

So it’s partly trying to paint that as a way of, the risks we are taking here, with this one planet that we have and it’s actually, when I try to talk with conservatives I talk about risk management, because I think there are massive gambles and experiments with this one planet that we have, and I get stunned by the *recklessness* if you look at it in that way (John).

In the interviews, another participant recommended encouraging people to develop their own ideologically-consistent responses because it would make “so many people on the conservative, slash free market side of politics feel much more comfortable in expressing their support for climate change action within some framework that is utterly free market” (Miriam).

The second problem-solution couplet placed more emphasis on strengthening the ideological basis for developing and evaluating climate responses, as depicted in the diagram below:



The problem was that the basis for developing and evaluating responses is not ideological enough: climate change responses are focused on reducing emissions without adequately attending to political or ideological implications. This problem was said to stem from people being ill-versed in political ideology and ignorant of the ideological implications of climate responses. As a result they naively advocate for and implement climate change responses that have negative side effects from an ideological point of view.

Unlike the first group of solutions described in this subsection, the solutions here were not necessarily geared towards encouraging acceptance of climate responses. In fact the goal was

to avoid or abandon climate responses that might have negative side effects from an ideological point of view. It is worth noting that only one participant (Tim) expressed this view that foregrounded ideological concerns to such an extent. The two examples he mentioned during the roundtable and interviews related to domestic carbon pricing and a global governance system to deal with the “global market externality” of greenhouse gas emissions. On carbon pricing, his interview comments were:

Where I think ideology was lost was some people obviously, particularly in terms of carbon pricing think that ah, if you have some sort of a market based thing, because they don't understand free market or capitalism, think that's somehow a more compliant or legitimate measure, when in fact they don't understand that it's just a form of regulation, it's just using the technology of the market to do that (Tim).

The basis of his rejection of carbon pricing was not that it is ineffective in reducing emissions, but that it is a form of top-down (government) regulation that he opposes on ideological grounds. Depending on how the government designs it, “some people win, some people lose”, with large potential for “political influence because ultimately it's entirely controlled by politicians” (Tim). He opposed a global governance system because it would “corrode” individual country sovereignty and political sustainability:

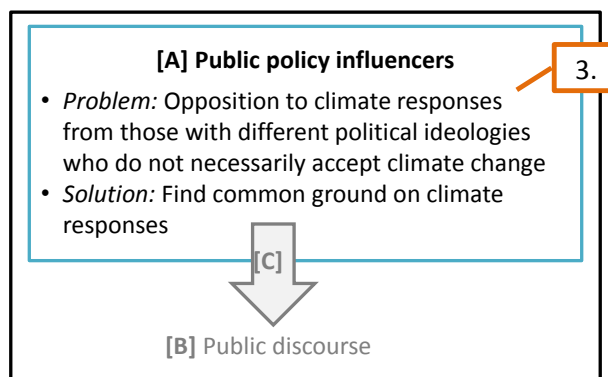
If you want to have some sort of global price that accurately reflects the [market] externality, you need some sort of structural mechanism to make that work and we kind of don't have that and the question is how much do you sacrifice, then you'd start to lead towards discussion about how much you can change systems of governance and economic structures to try and achieve that, but that very quickly corrodes what happens in individual countries and the political sustainability of the system. (Tim).

My point here does not concern whether or not top-down governance structures cause harm by “corroding” sovereignty and political sustainability, but rather that this participant did not cite or otherwise suggest that he was basing this statement on any evidence (for example in the way that another participant cited Wilkinson and Pickett's research). The basis was his ideological position.

In the above examples about carbon pricing and a global governance system, the participant's implicit solution was to abandon the responses because of the damage they would cause to

existing, functioning domestic markets and global governance and economic systems. It appeared that where reducing emissions and ideological imperatives were in conflict, the ideological held sway. The solution was to strengthen the ideological basis and, if the two were in conflict, to weaken the evidential basis about the need for far-reaching responses to rapidly reduce emissions. This translated into waiting for solutions that fulfil ideological and social requirements as well as reducing emissions. For the participant who expressed this view (Tim), such solutions hinged upon technological breakthroughs that are “only going to come over time”, and that occur independently of any societal changes or external facilitating forces: “I don’t see that there’s anything that we’ll do that will sufficiently shortcircuit the timeframe”. His overarching message was that the free market and private enterprise should be left alone to innovate the solutions in due course.

**Find common ground**



As in the first set of problems and solutions, participants identified that to a large extent, public policy influencers’ opposition to various climate responses stems from their ideological differences. Here, in the third type of problem and solution, they proposed solutions that enabled people to keep their ideological preferences, without necessarily accepting climate change itself (unlike in type 1 which revolves around establishing a climate science foundation). If opposition to climate responses from those with different political ideologies was the problem, the solution was to work around these ideological differences by finding common ground: responses that are acceptable to those coming from different ideological traditions and with differing views about climate change.

Within the roundtable conversations, participants implicitly or explicitly recognized that opposing political ideologies were the source of their differences about climate change responses and a barrier to finding ways to move forward on the issue. In general they were

able to agree on the need for societal responses based on the climate science.<sup>24</sup> However, they were unable to agree on which responses should be implemented or incentivized because this question related closely to their ideological differences. A participant summed up the situation at the end of the roundtable:

I think we're all of the view that action needs to be incentive driven, that it's not just goodwill and kindly philanthropic worldview that's going to make this happen. The differences are around who provides those incentives. I heard you know one set of voices saying the market can organically organize them. And I'm of the view that the collective action nature of the thing means that they have to come from a top down structure (David).

Given that these differences stem from opposing ideologies that are akin to faith-based choices, moving forward on the issue requires think tankers and others to either agree to weaken their ideologically based preferences, as described previously, or to keep the stronger ideological basis but agree on things that represent common ground across the different ideologies. Here participants proposed solutions that allowed public policy influencers to hold onto their pre-existing ideological positions and views about climate change itself while agreeing to responses that were still effective in reducing emissions or adapting to climate change (regardless of their climate change views). The two examples that participants discussed in the roundtable were clean energy and climate change adaptation.

In relation to clean energy, they discussed the attempts by McCain and Turnbull to 'sell' emissions trading schemes to their constituents by linking it to clean energy<sup>25</sup>: "[McCain's] message to the denialists in his own party, I don't like the term very much but just shorthand, is that well if you're right, the worst that'll happen is that we'll end up with a cleaner energy system" (Sam), and "A conservative prime ministerial candidate did the same here" (David). Here, participants recognized that responses must be effective at reducing emissions as well as fulfill social and political exigencies. The examples are about attempting to shift the skeptics

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<sup>24</sup> For one participant this was only to the extent that responses were compatible with his non-interventionist ideological preferences, only "through mechanisms which won't cause radical change for our society" (Tim).

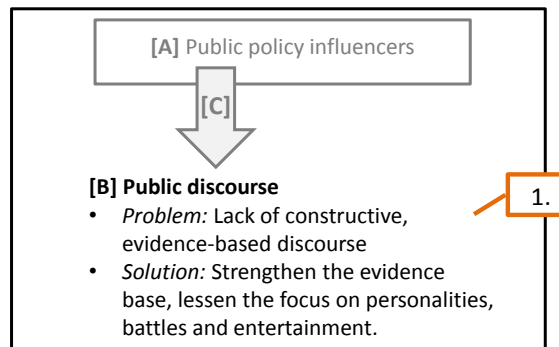
<sup>25</sup> Referring to former US Presidential candidate John McCain and former Australian Leader of the Opposition Malcolm Turnbull.

from actively blocking responses to allowing them to proceed, if not actively supporting them, by demonstrating that responses can both fit their ideological preferences and deliver other benefits. Similarly, climate change adaptation was identified as an area of common ground between ideologically opposed people including climate skeptics:

It doesn't matter what you think of the science, if you think it's natural climate change and everything else, you're going to need to concede eventually that actually we're going to need to adapt to a changing climate (Tim).

Rather than asking ideologically-opposed people to weaken their ideological bases, the above examples highlight points that are compatible with more than one ideological position and so can be accepted by actors holding opposing views. However, this approach to finding common ground did not go uncontested by other participants, in that it might not achieve the speed and scale of change required. That is, those critiquing it strengthened the evidential basis of evaluating responses rather than simply seeking responses that are compatible with multiple ideologies. (This is further commented on in section 6.3.2 on the failure to find common ground).

### 5.3.2 [B]: The public discourse



In section 5.2.2 on the climate change debate, we saw that participants construed mass media discourses as being more interested in personalities, battles and entertainment than in dealing with the issue. They described the problems of the public discourse or debate as stemming from its lack of evidence and the unconstructive nature of its ideological battleground. Participants' solutions to these problems revolved around strengthening the evidence base, particularly on the climate science and its implications for action, and weakening the focus on ideological battles and personalities. There was an implicit assumption that if the media changed in this way, it would facilitate a more constructive public debate on climate change and other issues. For example, interlocutors' conduct would be improved if they were no

longer encouraged to “go hammer and tongs at it for public entertainment” (Miriam). However the goal of shifting the public debate and the media was not a particular focus of the roundtable and participants did not propose specific solutions to achieve this.

Nevertheless two participants addressed it tangentially. One suggested that think tankers can contribute towards shaping the public discourse to be more evidence-based:

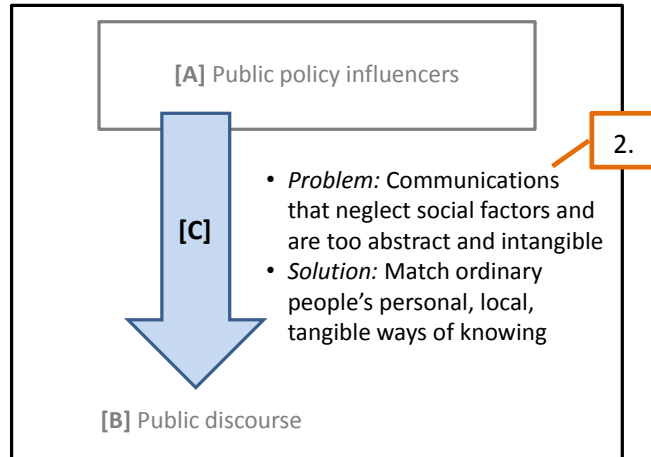
We actually do need to get them [think tanks] together and actually give them some more detailed information about that [climate science] because these guys, think tanks play a role in the discourse and play a role where political parties (inaudible), so there’s a bit of work to be done (John).

Another participant said he had been working towards “that ideal of public debate” in the Lowy Institute blog (Sam). The blog encouraged “a level of accountability because the format allows for hyperlinking, which means you need to cite sources”, thus strengthening the evidential basis.

Participants also spoke in passing about more effectively engaging ‘ordinary people’ in the climate change issue and appropriate responses. As previously noted, participants characterized ordinary people as being disengaged from climate science and unwilling to deal with climate change because “my life’s difficult enough” (David). Participants did not propose ways to change this situation, except as described in [C], changing the way that public policy influencers communicate to ordinary people. In essence, communications were seen as sometimes focusing too heavily on the evidence base (climate science) without necessarily connecting with ordinary people’s ways of knowing and their concerns in day-to-day life. In contrast to some of the literature on the topic, the think tankers did not recommend attempting to improve ordinary people’s climate literacy, saying that they thought it was about “more than the science” (David). Instead, there was a sense that through improving their own conduct as public policy influencers, think tankers could indirectly contribute to shifting how ordinary people relate to the issue by changing the character of the public discourse on climate change in the media. This would make the issue more evidence-based and less of a partisan political battle, and focused on climate responses rather than a faux debate about the science between warring ideologues.



### 5.3.3 [C]: Engaging with the public



The think tankers identified that the way climate change communications are framed plays a significant role in determining whether ordinary people accept or reject climate change. Communications that focus on the climate science or other evidential points without adequately meeting people's psychological needs are problematic because they tend to lead towards rejection of climate change itself or climate responses in the manner described in section 5.2.2. As an example, telling people who "genuinely thought that they were contributing to the growth of the community and economy" that are actually causing damage through contributing to climate change is likely to lead them to "react with the confirmation bias" (John). Such messaging communicates the evidential point but induces a negative psychological response and so is ultimately rejected. For similar reasons, engagement approaches that involve "war talk" (John) and talk of "sacrifice" (Sam) were said to be counterproductive. Participants also hinted at climate science communications being too complex, abstract and intangible for most people to want to engage with and understand, certainly in the way the science is communicated in journals and often even in mainstream media reporting (Tim; David).

Participants' solutions were about devising communications that resonate with "most Australians" by matching their personal, local, tangible ways of knowing. For example, they proposed that most Australians would respond to a personal and tangible motivation for climate action such as "do it for your kids" (Sam, Tim, David). Another said that public communications need to include firstly a "narrative of prosperity" that is personal and tangible, and that creates "a space in which we can then have a further conversation" about climate impacts such as extreme weather events and the urgent need for action (John). Here, the "narrative of prosperity", and the associated concept that it is possible to "manage carbon

and still have prosperity”, was said to open up the possibility of people accepting climate change and climate responses.

In terms of the responses themselves, participants agreed that climate change responses must fulfill social needs and desires as well as reduce emissions. Responses must be “politically sustainable” (Tim), “socially tenable” (Miriam), have “democratic permission” (David) and allow billions of people to fulfill their dreams that their children’s lives will be better than their own (Sam). Participants did not necessarily have the answers about how to do this in practice. The extent to which a rapid shift to a zero carbon economy could be done in a way that is “politically and socially sustainable” was said to be “very much open to question” (Miriam). In general terms, the strategy was to make people “more comfortable” about accepting climate change responses:

If there is an attempt made to actually speed up the scale of transition that requires a bigger role for government, what are some of the things that could be offered as trade offs to that, that might make a wider group of the community feel more comfortable with change that is that rapid (Miriam).

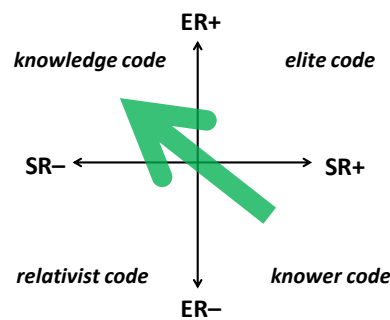
#### **5.3.4 Analysis**

The previous section outlined participants’ constructions of a number of problems with the climate change issue, and their proposed solutions to (most of) these problems. The problems and solutions fell into three types that represent different answers to the question of how to integrate ‘ideology’ with ‘evidence’ (see 5.1). The way these problems manifested and the types of solutions that participants proposed also varied depending on whether they were focused on [A] public policy influencers, [B] the public discourse, or [C] public policy influencers’ communications with players in the broader public debate. This section analyzes participants’ three types of problems and solutions in terms of their specialization codes, as they relate to ‘ideology’ and ‘evidence’.

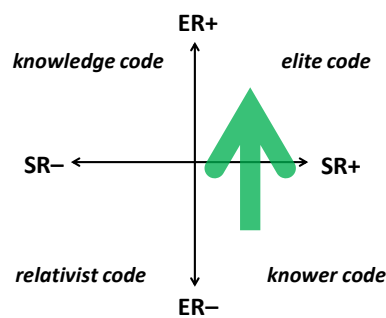
##### ***1. Strengthen ‘evidence’, either retain or weaken ‘ideology’***

In the first type of problem and solution, participants identified that their own and other public policy influencers’ proposals, [A], had become too ideologically based (SR+) without enough evidence (ER-): a *knower code* (ER-, SR+). They proposed that the way forward lay in taking climate science as the starting point for reassessing one’s position and preferred responses. The ideological basis must be weakened or compromised on if it is inconsistent

with the evidence. The statements in which participants delegitimized the “tribal” or “ideologically purist” battle, and their recommendation to weaken ideology if the evidence suggests otherwise, represent changing social relations to become weaker (SR–). Participants’ valorization of the more rational and the “technocratic” in their conversations reflects stronger epistemic relations (ER+). The “bearing witness” and calling to account of those who spread doubt about the science, as described by one participant, is about upholding the evidential basis of the debate, the climate science, reflecting stronger epistemic relations (ER+). In short, these solutions involve a code shift from a *knower code* (ER–, SR+) to a *knowledge code* (ER+, SR–).



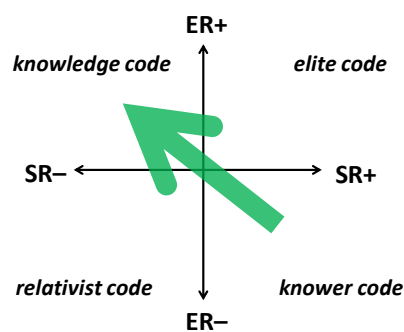
A variation on this theme was to allow public policy influencers to retain their strong ideological differences (SR+) while strengthening the evidence base particularly on climate science (ER+), and then to argue for climate change responses on the basis of ideology. The point was to make the ideologies explicit and open to debate and evaluation. This represents *both* relatively strong epistemic relations (ER+) and relatively strong social relations (SR+) – a proposed shift from a *knower code* (ER–, SR+) to an *elite code* (ER+, SR+).



The problems of the public debate, [B], were identified as stemming from its lack of evidence and its unconstructive ideological battleground, amongst related factors. The lack of evidence corresponds to relatively weak explanatory power: weaker epistemic relations (ER–). The unconstructive ideological battleground, the focus on strong personalities and their opinions, and on “public entertainment” all constitute elements of social relations between actors in the

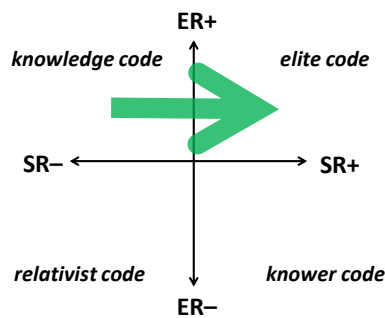
public debate. As such the public debate was depicted as exhibiting stronger social relations (SR+). In LCT terms, the problems of the public debate were constructed as stemming from a *knower code* (ER-, SR+).

Solutions revolved around strengthening the evidence base. In practice, in the case of climate change this would mean that media commentators and other public figures who shape the public discourse do so from a strong understanding of the climate science and acceptance of its implications. This solution was about strengthening the evidence base or changing epistemic relations to become stronger (ER+). The other side of the equation concerned removing what participants depicted as the unconstructive elements of social relations: the fixation on personalities, battles and entertainment. These solutions focused on changing social relations to become weaker (SR-). Putting these elements of the problem and solution together, the proposed solution was to shift the organizing principles of public discourse from a *knower code* (ER-, SR+) to a *knowledge code* (ER+, SR-).

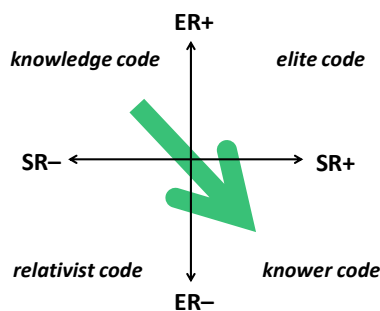


## 2. Either retain or weaken 'evidence', strengthen 'ideology'

A second type of problem was said to be the singular focus of some public policy influencers on the evidence, for example the need to reduce emissions, without attending to social (ideological and psychological) factors. Here, the emphasis on evidence corresponds to stronger epistemic relations while the lack of emphasis on social factors reflects weaker social relations: a *knowledge code* (ER+, SR-). The solutions played out differently depending on the context, and for climate change communications, the audience. In broad terms, the solution was to attend to the ideological and psychological factors: to strengthen social relations to become relatively strong (SR+). Participants' recommendation was for public policy influencers to retain the climate science basis (epistemic relations remain relatively strong) but to 'translate' it in ways that resonate with each other, that 'speak' to the different ideological viewpoints (relatively strong social relations). The solution was thus to shift public policy influencers from a *knowledge code* (ER+, SR-) to an *élite code* (ER+, SR+).



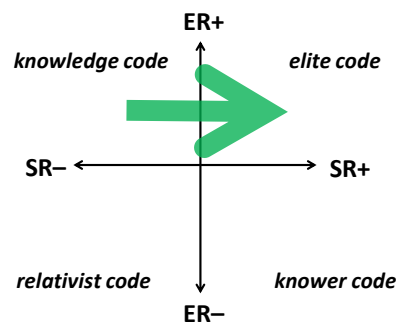
One participant expressed the view that others’ basis for devising and evaluating solutions typically attended to the need to reduce emissions (ER+) but was not ideological enough (SR-): a *knowledge code*. His solutions in relation to a carbon price and a global governance system were to strengthen the ideological basis (SR+) and downplay the evidence or the need to reduce emissions (ER-) if in conflict with the ideology: a *knower code*. In this way the solutions represent a shift from a *knowledge code* (ER+, SR-) to a *knower code* (ER-, SR+).



Finally, in terms of public communications, [C], participants identified that communications that focus on the climate science or other evidential points without adequately meeting people’s psychological needs are problematic because they tend to lead towards rejection of climate change or climate responses. The solution was for public policy influencers to bear in mind the climate science or the evidence about effective responses, reflecting stronger epistemic relations, as well as to communicate on the basis of stronger social relations, that is, by meeting different audiences’ psychological or ‘tribal’ or other needs. This entails an *elite code*.<sup>26</sup>

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<sup>26</sup> The actual communications developed by public policy influencers would be underpinned by a *knower code* and a *prosaic code* to match those of ‘ordinary people’ as constructed by the think tankers (and consistent with chapter 4 findings about the Rotary participants). For example, appeals to personal and tangible motivations for climate action such as “do it for your kids” and a “narrative of prosperity” were aimed at matching ordinary people’s personal, local and tangible ways of knowing, as characterized by the think tankers.



The above analyses focused on specialization codes as they were the major point of difference underlying between the think tankers' solutions. As a more general comment on Semantics, the think tankers' solutions were generally focused on resolving the problems of the climate change issue or debate, rather than about ways to directly reduce emissions. In this way they were very different to the Rotary participants' solutions to reduce emissions by recycling or composting. The think tankers' concepts are intangible and abstract: they reflect weaker semantic gravity, the degree of context dependency (SG-). They are also complex and interconnected (SD+), for example recognizing that the implications of climate science for rapid action were bumping up against incompatibilities with conservative and free market ideologies. As such they reflect stronger semantic density, the degree of interconnectedness of concepts. Together these signify a *rhizomatic code* (SG-, SD+).

### 3. Find common ground

The third type of problem and solution applied only to public policy influencers. Here the problem was portrayed as opposition to climate change responses by those with conflicting political ideologies, who do not necessarily accept anthropogenic climate change. As before, the strongly held political ideologies reflect stronger social relations while the downplaying of climate science reflects weaker epistemic relations: a *knower code* (ER-, SR+). The approach that participants offered as a solution was to find agreement (common ground) on climate change responses, with clean energy and climate change adaptation discussed as specific examples. Rather than asking ideologically-opposed people to weaken their strongly held ideologies, this solution lies in finding things that are compatible with more than one ideological position, and so can be accepted by those who hold opposing views. There was no need to strengthen evidence (epistemic relations remain relatively weak) or to weaken ideologies (social relations remain relatively strong), and so players' knower code (ER-, SR+) could be retained. No code shift was required in this type of solution.

However, such an approach to finding common ground did not go uncontested by other participants, in that responses such as only pursuing clean energy might not achieve the speed and scale of change required. In other words, those critiquing the approach sought to strengthen the evidential basis of response evaluation rather than just seeking responses that are compatible with multiple ideologies. This is further described in section 6.3.2 on participants' failure to find common ground. A division between participants became apparent between those suggesting that clean energy is enough or radical change is not required, and those portraying that viewpoint as neglecting the evidence about the speed and scale of change required. The critiquers were not criticizing the approach of finding common ground per se, but arguing that it must also be based on a foundation of climate science. In this way they recast the problem and solution as the first type, as the problem being a lack of evidence, a knower code (ER-, SR+) problem with the solution being to strengthen the evidence base (ER+) (that is, involving a code shift to a knowledge code: ER+, SR- or elite code: ER+, SR+). Thus it can be seen that participants sometimes constructed the same problem and solution in different ways, depending on the extent to which they valorize the climate science, or epistemic relations.

To sum up, the specialization codes underpinning the think tanker's problems and solutions are presented together in Table 5.1 overleaf. Participants proposed three types of problems and solutions that were underpinned by different specialization codes. In the main, they constructed the solutions as revolving around strengthening the evidence base, such as the climate science, or maintaining an already relatively strong evidence base. Depending on the context, it also involved either retaining think tankers' strong ideological basis, opening up the basis of policy positions for debate, or weakening it, for example to lessen the 'tribal battle' that played out in the media and amongst think tankers. In these examples, the green arrows in Table 5.1 move to or stay within the top half of the plane, signifying solutions that are underpinned by stronger epistemic relations. In contrast, a minority view was expressed that responses to climate change should be more fully informed by and evaluated on their compatibility with 'ideology', and incompatible responses should not be pursued, even if this means foregoing emission reductions. This was the view that responses to climate change might cause more harm to society than climate change itself. In Table 5.1, the arrow shows movement from a knowledge code to a knower code. The third type of problem and solution

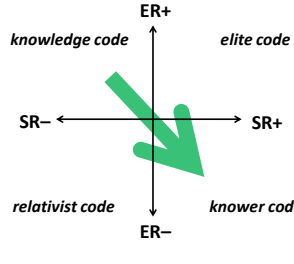
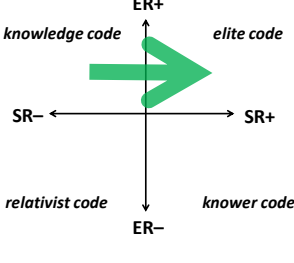
did not involve a code shift, but allowed public policy influencers to retain their ideologies and to find common ground.



**Table 5.1: The specialization codes of problems and solutions identified by think tank participants.**

Key: [A] public policy influencers, [B] the public discourse, [C] public policy influencers' communications with players in the broader public debate.

Problems	Solutions	
<p><b>1. Too little evidence (ER–), too much influence of social (ideological/ psychological) factors (SR+): <i>knower code</i> (ER–, SR+)</b></p>	<p><b>1. Strengthen evidence: code shift to an <i>elite code</i> (ER+, SR+) or a <i>knowledge code</i> (ER+, SR–).</b></p>	
<p>- [A] Lack of evidence (ER–), cannot agree on climate responses because of ideological differences (SR+)</p>	<p>- [A] Strengthen evidence base (to ER+) and weaken ideology if incompatible with evidence (to SR–): <i>knowledge code</i> (ER+, SR–).</p>	
<p>- [A] as above</p>	<p>- [A] Strengthen evidence base (to ER+) and retain ideologies (remains SR+): <i>elite code</i> (ER+, SR+).</p>	
<p>- [B] Lack of constructive, evidence-based debate (ER–) in public discourse and the media; too much ideological battle (SR+)</p>	<p>- [B] Strengthen evidence base (to ER+) and lessen the ideological battle (to SR–): <i>knowledge code</i> (ER+, SR–).</p>	
<p><b>2. Focus on reducing emissions (ER+) without attending to social (ideological/psychological) factors (SR–): <i>knowledge code</i> (ER+, SR–).</b></p>	<p><b>2. Strengthen social factors: code shift to an <i>elite code</i> (ER+, SR+) or a <i>knower code</i> (ER–, SR+).</b></p>	
<p>- [A] Communications about climate science (ER+) do not 'speak' to different political ideologies (SR–)</p>	<p>- [A] Retain climate science (remains ER+), and 'speak' to the different political ideologies (to SR+): <i>elite code</i> (ER+, SR+).</p>	

<p>- [A] Basis for developing and evaluating solutions is too focused on reducing emissions (ER+) and is not ideological enough (SR-)</p>	<p>- [A] Downplay the evidence or the need to reduce emissions if in conflict with ideology (ER-); strengthen ideological basis (SR+): <i>knower code</i> (ER-, SR+).</p>	
<p>- [C] Communications that neglect social factors (SR-) contribute to 'ordinary people' rejecting climate change or climate responses.</p>	<p>- [C] Attend to the social factors (SR+) when communicating climate change: integrate climate science (ER+) with ability to connect with 'ordinary people' (SR+) (<i>elite code</i>: ER+, SR+).<sup>27</sup></p>	
<p><b>3. [A] Public policy influencers with conflicting political ideologies (SR+) oppose climate responses, do not necessarily accept climate change (ER-): <i>knower code</i> (ER-, SR+)</b></p>	<p><b>3. [A] Find common ground on climate change responses. No need to strengthen evidence (remains ER-) and can retain ideologies (remains SR+): <i>knower code</i> (no code shift).</b></p>	

It can be seen that the specialization codes underlying think tankers' solutions varied by context, that is, depending on the actors they were talking about (public policy influencers, public debate, communication from public policy influencers to the public/media). In addition, within a given context the participants sometimes differed in their support for one type of solution or another. This observation raises the question: on what basis did participants' preferences for solutions differ? This question was addressed through constellation analysis, the results of which are reported in chapter 6. In the final part of chapter 5, the following section turns to address the basis on which participants said they know about climate change.

#### 5.4 BASIS FOR KNOWING ABOUT CLIMATE CHANGE

The previous three sections investigated the think tankers' constructions or views about various aspects of climate change and climate responses. This section examines the basis on which participants say they form their views about climate change, in order to gain further insights into their knowledge practices. As identified in the chapter introduction, the think

<sup>27</sup> The actual message would be underpinned by a knower code and a prosaic code, to match the codes of "ordinary people". See 7.4.2 on code matching messages to audiences (translation).

tankers indicated that they value 'ideology', 'evidence', and 'ideology' and 'evidence' together. This section examines to what extent they based their statements about climate change on each of these bases of legitimacy. It then analyzes the specialization codes that underlie these ways of knowing so as to have a consistent basis on which to compare and contrast the think tankers' knowledge practices with those of others and to understand the implications that might follow from these findings.

#### **5.4.1 'Ideology'**

At times, participants attributed their views on climate change and other issues to their political ideologies, describing themselves in terms such as "progressive", "conservative", "Burkean", "economic liberal", "pragmatic incrementalist", "centrist", "my free market view of the world" and "my sort of social democratic tendencies". For example, when one participant said that "any sort of radical change in society I suspect would actually undermine trying to achieve the objectives, if you became slavishly dedicated towards trying to cut greenhouse gas emissions" (Tim), another agreed:

And that in fact is probably the conservative sentiment too ...that's really a Burkean worldview about radical change, about rationalism in politics, [and] central planning doing a great deal of damage to very delicate and longstanding social systems (Sam).

In these examples, the participants do not give any indication that their statements are based on evidence; they are based on what they "suspect" and their interpretation of the world as seen through the lens of their "worldview", to use participants' terms. The following quote demonstrates how this participant's worldview forms the basis for his statement:

I don't follow individual technologies very closely but I have absolute faith that we will get to a point where we can generate energy using forces of the earth and the sun's rays etcetera to deliver what we need to do (Tim).

Here, "I don't follow individual technologies very closely" suggests at least a partial disavowal of evidence, while "I have absolute faith that..." suggests faith-based optimism with no evidence provided. An evidence-based alternative might have run along the lines of: "recent progress in the development of solar/wind/battery/other technologies suggests that we will soon be able to..."

Another roundtable conversation revolved around two opposing views of the market. It became apparent that participants were unable to adjudicate or find a conclusive answer to the argument because they were arguing from different ideological standpoints. On being asked if they “accept the Stern view that it’s been a market failure in not adequately pricing in the externalities?”<sup>28</sup> (John), the participant quoted above said: “No I don’t. I have a real hostility to the term market failure because markets don’t fail” (Tim). Another participant pointed out “But that rejects any conventional view of economics” (David). The argument over whether or not climate change represents a market failure, or more generally, whether market failures exist, is not one that can be determined or adjudicated by reason or “evidence”. The participants’ differences are rooted in their incommensurable ideological positions. Those who subscribe to a “conventional view of economics” say that market failures exist and so external intervention in markets is justified, while on the basis of a free market viewpoint another participant says they do not and so no intervention is warranted.

Even the participant who portrayed himself as being non-ideological drew on ideological positioning at times:

There’s all these inertias built in so you actually have to have a risk management approach to that, and for me that’s a mixed economy. I strongly agree with that and I strongly prefer market approaches that have long-term investments and commercial sustainability ... because I, I’ve fought against state monopolies, this is the thing that people sometimes forget, that greenies have as much fought against state monopolies as they have against the market (John).

The “mixed economy” solution is not argued on evidential grounds, for example on past performance in similar contexts, but as part of this participant’s positioning as being pro-market and anti-monopolies. The positioning is one choice among many ideologically based choices, as reflected in the wording: “for me that’s”, “I strongly agree with that”, “I strongly prefer market approaches” and his focus on what being a “greenie” entails. Together these

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<sup>28</sup> *The Economics of Climate Change: The Stern Review* was produced for the British government by economist Nicholas Stern. It states that “climate change is the greatest market failure the world has ever seen” (Stern 2006, p. viii).

suggest some unacknowledged choice-based and identity-based influences in this participant's approach to solutions.

#### 5.4.2 'Evidence'

At some stage all participants referred to research papers or surveys as the basis for their statements about climate change. They cited the results of polling about Australians' acceptance of climate change (Tim, John), statistics on the uptake of rooftop solar panels (Miriam), journal articles and research reports about climate science (John, Miriam) and academic commentary about climate change communications (Sam, Miriam). Here, the evidence provided a stronger basis of evaluation and ideology or group identity a weaker basis. For example, one of the roundtable participants referred to "the science" as the basis of his evaluation that the Kyoto Protocol had turned out to be inadequate and ineffective, albeit an important first step:

We've continually fallen behind on the science and on the implementation as a kind of international community and allowed the Kyoto Protocol to be used as a kind of a defensive mechanism almost, to say well look, Kyoto! You know let's just keep pushing away at that and all the while we're slipping backwards (David).

The implicit comment here was that while it might suit some to hold up the Kyoto Protocol as being a successful response, the inconvenient truths of the evidence on emissions reductions suggest otherwise.

In another example, one of the think tankers conceded a point of evidence that ran counter to his school of thought, and recognized it as such. In the interview he discussed how best to encourage innovation:

There are really different schools here, and I'm sure Tim and I too would, sort of instinctively turn away from the idea of governments picking winners. But then again as I think I said at the time, it's hard to argue with the dramatic drop in solar energy costs, and that's all been a direct result of governments picking winners (Sam).

Similarly, another participant justified his support for public expenditure on climate responses based on past successes of government funding: "If you look at big advances in science and aerospace and all the rest of it during the twentieth century they come with *enormous* licks of public investment" (David).

These examples are quite different to those in the previous subsection that rested on “absolute faith” and ideological aversion to government intervention. The last two examples here rested on the evidence that past government funding had proved its merit in facilitating a range of technological advances.

### 5.4.3 ‘Ideology’ and ‘evidence’

The think tankers sometimes based their statements on the integration of evidence about effective ways to reduce emissions with approaches to solutions that are rooted in particular ideological traditions. For example, one participant said:

I’m fascinated by the *incredible* advances in clean energy particularly solar in the last twenty or thirty years, and so I remain a sort of technological optimist (Sam).

The technological advances to date are congruent with this participant’s “technological optimism” and suggest that his optimism might be a sound position, based on both the evidence and his existing ideological preferences for minimal societal disruption. As articulated in the previous subsection (5.4.2), he recounted that government funding had proven its merit in facilitating advances in solar energy technology and a “dramatic drop” in costs (the evidence). This is quite different to the ideological basis for Tim’s technological optimism that was based on “absolute faith” and an ideological aversion to government intervention (5.4.1).

A further example demonstrates the integration of ideology and evidence and the ways in which this differs from an ideological basis:

Markets are incredibly efficient useful tools for solving profitable problems, solving climate change isn’t that profitable yet and it certainly isn’t as profitable as it needs to be in the context of the speed of abatement that is required. ...So the way that you change that is with that mix of regulations and either making damaging activities less profitable or making activities that will have some positive externalities in terms of drawdown of emissions, more profitable. And that’s a classic mixed economy response really to a shared social problem (Miriam).

Here Miriam sets up an argument for the need for intervention because of the mismatch between profitability and speed of abatement required, according to the climate science. There is a direct evidence-based link between abatement measures not being profitable and the need for intervention to make them more profitable. This is quite different to the example

in which John identifies system inertias and says that “for me” the way to deal with them is a “mixed economy” and “market approaches” (5.4.1). As such his conclusion appears to be based more on ideological preferences than as a logical extension of the nature of the inertia. In contrast, by basing her statement on the speed of abatement required according to climate science, Miriam is putting into practice her recommendation to take the climate science as the starting point and then argue for solutions based on ideology (5.3.1: *Strengthen evidence, retain ideologies*). Her statement is also based on the integration of evidence about effective ways to reduce emissions and an approach to solutions that is rooted in a particular ideological tradition. Without the evidential basis and justification, her talk of the need to make solutions profitable and a mixed economy response might appear to be based only on ideological preferences. In John and Miriam’s examples, both participants reached the same recommendation for a “mixed economy” response but John’s example in 5.4.1 had a stronger basis in ideology while the example here was based on the integration of ideology and evidence.

It is worth noting that this is not intended as a characterization of any participant’s dominant basis of statement. For example, on many other occasions, John’s statements were based on evidence, in particular on climate science, and at other times on ideology and evidence together. The “mixed economy” examples are provided as illustrative contrasts of an ideological basis (5.4.1) and integration of ideology and evidence (5.4.3).

#### **5.4.4 Analysis**

During the roundtable and interviews, participants exhibited three bases of knowing about climate change that corresponded to their descriptions of ‘ideology’, ‘evidence’, and ‘ideology’ and ‘evidence’ together. In terms of specialization codes, the emphasis on ideology as the basis for evaluating climate responses reflects philosophical, political or identity-based preferences of actors in the field, or stronger social relations (SR+). There was also a downplaying of the need for emissions reductions if they were seen to be incompatible with ideological preferences. This reflects weaker epistemic relations (ER–). So a basis of knowing about climate change that derives from a participant’s ideology is underpinned by a *knower code* (ER–, SR+). The opposite situation of evaluating solutions on a strong evidential basis (ER+) and a downplaying of ideology (SR–) reflects a *knowledge code* (ER+, SR–). Finally, a strong basis in both ideology and evidence together, in which both epistemic relations and social relations are relatively strong, corresponds to an *élite code* (ER+, SR+). In summary, participants’ bases of

knowing about climate change shifted among three specialization codes: a knower code, knowledge code and elite code.

In relation to semantic codes, the think tankers' bases of knowing are highly complex, abstract and context-independent, especially when compared with the Rotary participants' personal, local, tangible ways of knowing. The political ideologies that the think tankers drew on are abstract and theoretical. Concepts such as a "Burkean worldview" and "a risk management approach" are also complex and highly condensed, incorporating and invoking a suite of related ideas and implications for action (as opposed to simple, tangible things like recycling bins in the Rotary case). The types of evidence they referenced concerned trends such as the growing uptake of rooftop solar power, and their implications for dealing with climate change, involving complex chains of causation and effect. The think tankers also examined the effects of government incentives or investment, themselves complex, abstract concepts. In addition there was an additional layer of complexity involved in the integration of ideology and evidence. The abstract and context independent nature of all of the above bases of knowing reflects relatively weak semantic gravity (SG-). The high level of complexity reflects relatively strong semantic density (SD+): a *rhizomatic code* (SG-, SD+).

Thus as previously seen, the rhizomatic code was the one fundamental organizing principle that participants shared. The differences both within and between participants depended on the context with shifts in specialization codes. The implications of these differences are briefly alluded to in the conclusion and are explored in more detail in chapter 6.

## 5.5 CONCLUSION

This chapter explored how the think tankers constructed climate change and the basis for differences in their statements. It addressed research question 1 on climate change views and their basis or organizing principles, and thereby contributes towards the broader goal of understanding the contours of the climate change debate.

The analyses revealed that participants constructed physical climate change, as known through climate science, and the climate change issue or debate, as two distinct kinds of knowledge practices with different bases of legitimacy (5.2). Climate science was characterized as being underpinned by a *knowledge code* and a *rhizomatic code*. The climate change debate was



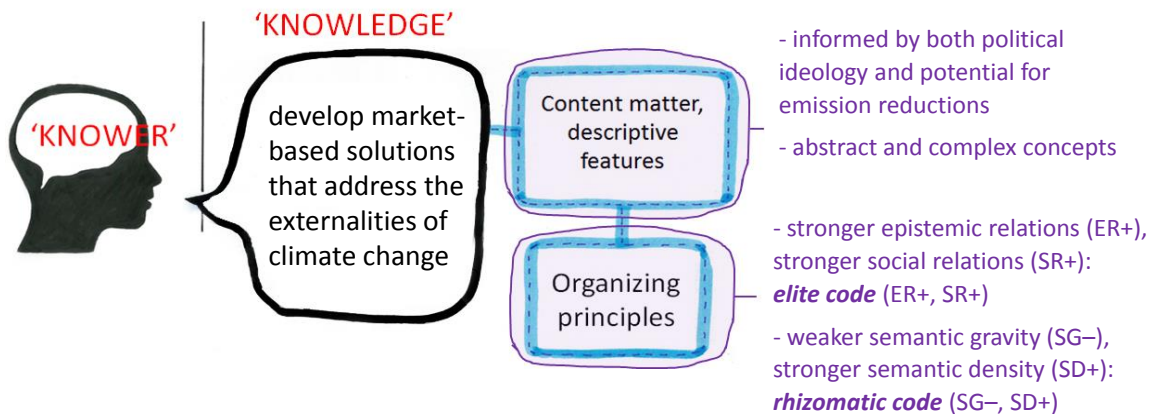
portrayed as being dominated by the *knower code* and *prosaic code* of the media and ‘ordinary people’. Thus, the think tankers identified code clashes between climate science and the public debate. In contrast, they constructed their own and other public policy influencers’ input to the climate change debate as being underpinned by a *rhizomatic code* and shifts between three specialization codes (a *knower code*, *elite code* and *knowledge code*) depending on the context.

The think tankers set out a number of problems with the climate change debate to which they proposed solutions (5.3). The problems and solutions tended to fall into one of three types that related to different specialization codes. The first of these identified that public policy influencers’ positions had become too ideologically based without enough evidence: a knower code. The solutions revolved around strengthening the evidence base, such as the climate science, or maintaining an already relatively strong evidence base. Think tankers’ strong ideological basis could be retained and opened up for debate, or weakened, for example to lessen the ‘tribal battle’ that played out in the media and amongst think tankers. These represent shifts from a knower code to an elite code or a knowledge code. A minority view was expressed that climate responses are geared towards reducing emissions without fully taking into account their societal impact and ideological (in)compatibility (a knowledge code). Solutions should be more fully informed by and evaluated on their compatibility with ‘ideology’, and incompatible responses should not be pursued even if this means foregoing emission reductions (a knower code). The third type of problem and solution did not involve a code shift, but allowed public policy influencers to retain their strong political ideologies (a knower code) and to pursue common ground on solutions that are compatible with their ideologies.

Finally, the basis on which participants say they form their views about climate change was analyzed, in order to gain further insights into their knowledge practices (5.4). The bases are a rhizomatic code and shifts between three specialization codes, corresponding to the think tankers’ descriptions of ‘ideology’ (knower code), ‘evidence’ (knowledge code) and the integration of ‘ideology’ and ‘evidence’ (elite code).

To provide a comparison with Figure 4.1 (Rotary), Figure 5.3 shows the equivalent analyses of a think tank statement about preferred climate change responses. The organizing principles provide a systematic way of both characterizing the think tankers’ statements and comparing

the nature of their statements with those of the Rotary participants, as further explored in chapter 7.



**Figure 5.3: Example analysis of both the content matter and organizing principles of a think tank statement about climate change responses**

The think tankers’ rhizomatic code, reflected throughout the roundtable in the language of theoretical abstractions and policy prescriptions, appears to be the only glue that held them together. On the Specialization front, their ideological differences, reflecting stronger social relations (SR+), were what created the battleground and made it so difficult for them to agree on solutions. They agreed on the climate science evidence only to the extent that it was compatible with their ideologies. A way forward in this situation would be for think tankers to weaken the influence of ideology when in conflict with the evidence, whereas in the roundtable the reverse tended to occur. Think tankers could keep their different schools of thought that find their constructive expression in the “marketplace of ideas”, but be willing to weaken this basis and to accept a way of evaluating the merits of an argument or proposed solution (strengthening epistemic relations). Thus the LCT analyses complement and extend McCright & Dunlap (2010) and Campbell & Kay’s (2014) findings that people tend to reject ideologically incompatible solutions, by identifying the organizing principles of this phenomenon. The analyses help to define the task for communications and engagement, described in chapters 7 and 8, to find ways to shift the think tankers’ knowledge practices towards stronger epistemic relations and weaker social relations.

There are some interesting implications of the think tankers’ range of specialization codes. Firstly, at different times in the roundtable, the same participants switched among all three codes (knower code, knowledge code and elite code), suggesting that they are adept in all

three. In contrast, most of the Rotary participants' conversations exhibited one specialization code: a knower code. These and other differences between the two groups and their implications for communications and engagement are explored in Chapter 7. Secondly, although all participants switched between specialization codes, there was a noticeable trend for some participants to gravitate towards a knower code and others towards a knowledge code as the basis of legitimacy. In other words, for some, their ideological preferences strongly shaped their positions on climate change while others downplayed this. In particular, while they all constructed climate science as being underpinned by a knowledge code, there were differences in their bases of knowing about it. Two participants referred to scientific artifacts such as journal papers (a knowledge code), and the other three admitted that their positions were based on only a cursory understanding of climate change (a knower code). The implications of the think tankers' varying bases of legitimacy will become more apparent in chapter 6. In short, the differences had some bearing on participants' ability to find and maintain common ground.

This chapter has raised questions in two areas, which are addressed in chapter 6. Firstly, the think tankers were found to differ in the types of solutions they offered to particular problems. This observation raises the question: on what basis did participants' preferences for solutions differ? Secondly, the solutions that participants proposed necessarily required a number of code shifts, in the main towards a stronger evidence base, that would have changed their modus operandi. They also proposed an approach of finding common ground on solutions. This raises questions about what they did in practice in the roundtable – in other words, whether they practiced what they preached. Did they make any code shifts, and were they able to find any areas of common ground on climate responses?

## **CHAPTER 6: THINK TANKERS' CONSTELLATIONS AND COMMON GROUND**

### **6.1 INTRODUCTION**

This chapter performs two functions. Firstly, in relation to research question 1 about climate change views and their basis, it builds upon the previous chapter's findings on the legitimation codes underpinning think tankers' views, by analyzing the way that they tended to group together climate change solutions into three distinct constellations (6.2). Secondly, in relation to research question 2, it explores interactions between the think tank participants, in particular, their negotiations of ideological differences to find common ground on solutions, or not (6.3). It identifies patterns in terms of the legitimation codes, code shifts and constellations that tended to be associated with finding common ground and failure to find common ground. In these ways the chapter also addresses two questions raised in chapter 5, concerning the basis on which participants' preferences for solutions differed, and whether they made any code shifts, particularly as a means to an end of finding common ground.

The analysis begins by identifying the basis on which the think tankers' constellations were demarcated, namely on the preferred level of government intervention in climate responses (6.2). Section 6.3 then examines the different forms of conversation that were associated with the formation of common ground between participants, a failure to find common ground, or disintegration of previously agreed common ground. It analyzes the codes and constellations that were associated with success or failure in finding common ground. It also identifies other factors that appeared to contribute to these outcomes. These analyses are important because they contribute to understanding both the dynamics of the climate change debate as well as the ways in which seemingly irreconcilable stances might be transcended. In short, finding common ground was associated with a code match and constellation match. Common ground was not found or it disintegrated when a code clash or constellation clash occurred.

### **6.2 ANALYSIS OF CONSTELLATIONS**

A major division between participants' preferred solutions became apparent during the roundtable, as described by one of the participants:

The differences are around who provides those incentives [for climate action]. I heard one set of voices saying the market can organically organize them. And I'm of the view

that the collective action nature of the thing means that they have to come from a top down structure (David).

This statement identifies the polar opposite stances of advocating for and against “top down” (government) intervention. These loosely reflect ‘progressive’ or ‘left’ and ‘free market’ politics, respectively. In addition, a third stance was sometimes occupied by the participant who identified himself as a conservative (Sam). He was supportive of government intervention only to the extent that it facilitates developments that would not come about organically through the market and private interests, and does not cause damage to “very delicate and longstanding social systems”.

These divisions form the basis of three constellations, each of which constitutes a collection of ideologically-informed stances. As summarized in Table 6.1 (overleaf), the constellations are demarcated on the preferred level of government intervention in facilitating or implementing climate change solutions. They can be characterized as ‘pro-intervention’, ‘minimal intervention’ and ‘anti-intervention’. The ‘pro-intervention’ stance supports planning and taking action now, and intervening in social and political systems to facilitate change. The ‘minimal intervention’ stance is a conservative one interested in conserving social and political systems, and supports limited intervention in a risk management approach. The ‘anti-intervention’ stance opposes government intervention on the basis that interference in the market and individual liberties is counterproductive.

Table 6.1 is divided into themes that arose from the think tankers’ conversations, such as the types of solutions that are required to address climate change, with quotes to illustrate each theme. In the table, column lines mark the divisions between different points of view, where common ground was not found. Areas of common ground between two constellations are shown as a one cell entry with lines removed, as in the example of climate change representing a “market failure”. Common ground between participants from all three constellations is shown as one row across all constellations, for example, their agreement that both climate change mitigation and adaptation are required.

**Table 6.1: Think tank constellations and areas of common ground.**

<i>Theme</i>	<b>Pro-intervention</b>	<b>Minimal intervention</b>	<b>Anti-intervention</b>
Rationale for stance	Market incentives are not commensurate with the scale and speed of the challenge, and do not take account of externalities and the common good, so government intervention and planning are needed (Miriam, David, John). “A top down structure”, i.e. government, is required to incentivize the thousands of independent systems (David).	Western liberal democracy’s “millions of little systems” and “experiments” will find the solutions. Limit government intervention to those things the market and private interests do not or cannot provide, e.g. funding “basic science” (Sam).	Markets are not free enough. The market provides the necessary incentives for the private sector to develop solutions (Tim).
Nature of the climate change problem	Climate change is a ‘wicked problem’, requires systemic solutions at all levels: individuals, businesses, governments, international structures (e.g. The Climate Institute “works with community, business and government”; the Kyoto Protocol only one plank of climate response) (John, David, Miriam).	‘Tame problem’: “surely [clean energy] is all we need to agree on? Isn’t that enough?”. But the partisan political nature of the climate change debate stymies even this partial solution (Sam)	‘Wicked problem’ translates into too complex to act: how do you design a top-down system to change behavior? Any global agreements and structures would “corrode” individual countries’ efforts and “political sustainability” (Tim).
	Market externalities exist (eg Tim: “the externalities are global”)		
	Climate change is a “market failure” (John, David, Sam).		“Markets don’t fail” (Tim).
Approach to risk and planning	Precautionary Principle (John); A “risk management” approach (John, Sam) requires some forward planning; avoid the “recklessness” and “massive gambles” with the earth’s systems (John).		Planning for what will be needed in the future is counterproductive; those things will happen in due course.

	No guarantee that climate responses will be adequate; urgency of acting now because actions later might not be sufficient (Miriam).	Western economic and political systems have produced great innovations, will find climate change solutions, therefore “technological optimists” (Sam, Tim). “I have absolute faith” in development of new energy sources (Tim).	
	Plan and take action for individual as well as collective wellbeing, for “the collective legacy” and “future generations” (David).	Take action based on individual responsibility: “People have to live with the consequences of their decisions and they take a degree of risk” (Tim). Take action based on what “your kids” need now; “the discount effect” applies to the future (Tim, Sam).	
Solutions	“We’re all of the view that action needs to be incentive driven, that it’s not just goodwill and kindly philanthropic worldview that’s going to make this happen” but “who provides those incentives?” (David)		
	A preference for “market based” solutions (John); carbon pricing with a “heftier” target (Miriam), within “a system of limits” (John). “A classic mixed economy response” of regulations and financial incentives and disincentives (Miriam).	Pro- market based solutions such as carbon pricing; “instinctively” averse to governments “picking winners”, but “incredible advances” in solar technology are a result of “government pump priming” (Sam).	Free market solutions. Governments “picking winners” distorts the market. “Market based” solutions (e.g. carbon pricing) are “artificial markets”, “big government and statism”, not free market (Tim).
	Pro- economic growth: but not current “cancerous” version, need “dematerialized” prosperity”, anti-growth is greenies’ “own goal” (John). People favour economic growth over reducing emissions, therefore solutions need to be pro-growth (Sam). “Obviously” economic growth is vital for job creation (Tim).		
	Not necessarily pro-growth: “Jury is out” on extent possible to decouple growth and emissions (Miriam).		
	Need greater equality in society for greater willingness and “collective investment” to make the rapid changes required (Miriam).	Burkean worldview: central planning has caused great damage to society; “radical social or political change” is not necessary for mitigation or adaptation (Sam). “Slavishly” pursuing emission reductions would undermine society’s ability to reduce emissions;	

		when people's security/wealth needs and aspirations are met, they can have concern beyond themselves (Tim).
	Climate change solutions must be "politically sustainable" (Tim), "socially tenable" (Miriam), need "democratic permission" (David). Not "war talk" (John), not "sacrifice" (John, Sam, Tim). "The narrative of prosperity", "opportunity" (John), allow people their "dreams that their kids' lives will be better than their own" (Sam), "material aspirations" (Tim).	
	New technologies will play a role (John, Sam, Tim). E.g. "my sense was that people coalesced around market based solutions and technological solutions", but differed on how to "encourage technological innovation" (Sam).	
	Need both mitigation and adaptation – but subject to the provisos below.	
	Urgent need for increased mitigation efforts now, so as to stay within 'safe' level of warming (John) and to minimize "adaptation and suffering" later (Miriam).	Need mitigation but not at the expense of "very delicate and longstanding social systems".
		Some mix of mitigation and adaptation <i>in the future</i> . Need mitigation without "big government and statism", creation of 'artificial markets', withdrawal of individual rights and responsibilities.
	Governments should abolish subsidies to the fossil fuel industry to allow "Schumpeterian destruction" to proceed (Miriam, John, Tim).	



It is important to note that the entries in Table 6.1 were things said by the five participants in the roundtable. It does not mean that every “progressive”, “conservative” or “free marketeer” will subscribe to the views captured in these three constellations, and so the titles of the constellations avoid such labels. Instead they reflect the basis of division: the level of top-down (government) intervention. Secondly, it is worth pointing out that despite one of the participants (John) emphasizing his neutral political-ideological position, by default the speed and scale of action that he advocated for in the roundtable did generally align with the pro-intervention constellation rather than slower, more conservative responses or those that happen ‘organically’ via the market.

While four of the participants (Miriam, David, John, Tim) always argued from one particular constellation, the other participant (Sam) shifted between the three constellations. When Sam said he was “instinctively” averse to governments “picking winners” his argument aligned with the anti-intervention constellation, but he also acknowledged “the dramatic drop in solar energy costs, and that’s all been a direct result of governments picking winners”, the pro-intervention constellation. It appears that his movements between the constellations were closely related to shifting emphasis on “ideology” or “evidence”, either stronger social relations or stronger epistemic relations, as the basis for evaluating problems and solutions. When emphasizing social relations, for example in describing his “Burkean worldview” against “central planning”, his statements aligned with the anti-intervention constellation; when epistemic relations were stronger, as in describing the demonstrable advances in solar energy technologies and reduction in costs, his statements aligned with the pro-intervention constellation.

The remainder of this chapter investigates how the constellations relate to the moves that participants made toward and away from common ground.

### **6.3 COMMON GROUND**

This section investigates examples of the formation of common ground (6.3.1), failure to find common ground (6.3.2), and disintegration of previously found common ground (6.3.3). It identifies patterns across the examples, in terms of the legitimation codes, code shifts and constellations that tended to be associated with finding common ground. While recognizing that the individuals are not case studies, the constellations relate to ideological stances which

differ between participants, and so the analyses refer to individual participants more so than in other chapters.

### 6.3.1 Finding common ground

Despite their ideological differences, the think tankers were able to find a number of areas of common ground during the roundtable. These are outlined below with some comments that identify the legitimization codes underlying each area of common ground:

- *Acceptance of mainstream climate science* – this was participants’ ‘in principle’, general agreement at the start of the roundtable that they were all “broadly accepting” of mainstream climate science, without any further details (a rhizomatic code).
- *The need for both climate change mitigation and adaptation* – subject to various caveats that pertained to participants’ constellations as shown in Table 6.1. This area of common ground suggests that participants paid at least some credence to the evidence, or stronger epistemic relations, about the implications of climate science (a knowledge code or elite code).
- *“Clean energy” is one of a suite of solutions, and new technologies will play a role in mitigating climate change* – the many facets of the climate change problem require a suite of solutions (a rhizomatic code).
- *“The narrative of prosperity”, “opportunity”, allow people their “dreams that their kids’ lives will be better than their own”. Avoid “war talk” and “sacrifice”* – these concepts align with solution type 3 (section 5.3.3), climate change responses need to fulfill social as well as environmental needs, in terms of fulfilling people’s needs and desires and helping people to feel more comfortable about accepting climate change. They thereby foreground both stronger epistemic relations and stronger social relations (an elite code).
- *Climate change solutions must be “politically sustainable”, “socially tenable”, need “democratic permission” for their implementation* – as above.
- *Climate change represents a market “externality”* – the complex, abstract concept of externalities signifies a rhizomatic code. As described in section 5.4.1, participants debated the concepts of “externalities” and “market failure” on the basis of their differing ideologies (a knower code).
- *Governments should abolish subsidies to fossil fuel industries* – this was able to fit in multiple constellations as an ‘in principle’ concept (rhizomatic code) but the common

ground disintegrated when participants discussed the details (prosaic code) (see section 6.3.3).

The above examples provide some indications that the formation of common ground might tend to be associated with concepts that are able to fit in multiple constellations. When a concept is compatible with both pro- and anti-intervention, then it can potentially be accepted by participants coming from these opposing viewpoints (as well as minimal-intervention occupying the middle ground). Common ground also tended to relate to 'high level', highly condensed concepts such as "mainstream climate science" and adaptation, things that could be agreed with in principle but without any detail, and that thereby reflected a *rhizomatic code*.

However, the example below differs from the previous examples in that agreement or common ground was found when participants shifted to a *prosaic code*. The roundtable conversation reproduced below followed my question about whether top-down intervention could create "societal or cultural shifts" to facilitate action on climate change:

Sam: Ah, my strong instinct is to say no. Just on the basic premise that people's values change extremely slowly, but- and can be changed only very slowly, but the incentives can be changed much quicker and much more easily than that.

Miriam: Sometimes society goes a bit nonlinear though, you do find some, I mean for the most part I agree with you but you know-

Sam: Yeah on issues such as racism for instance, mmm,

Miriam: Things sometimes change {quite rapidly,

Sam: {That's true, that's true. And actually when I think about it I mean in my lifetime, Australian culture- these may sound like trivial examples given what we're talking about today, but on things like smoking, for instance, Australian values have changed and that's basically been through public information and advertising, that that's happened.

In this conversation two types of shifts occurred, relating to semantic codes and specialization codes. Firstly, I asked the question in generalized, abstract terms and Sam followed suit in his answer: that people's values change slowly while incentives can be changed quickly and easily. He also began in ideological terms: "my strong instinct is..." and gave an answer that was consistent with his conservative ideology. Then, when prompted to think of specific examples

of disconfirming cases when “society goes a bit non-linear” (Miriam), Sam replied with two examples (racism, smoking) and an explanation of causation and effect (public information and advertising that effected changes in behavior). In this example, unpacking the generalization allowed for scrutiny of the epistemic merits of the line of argument. In other words, Miriam prompted a shift in focus away from Sam’s “instinct” as a certain kind of (conservative) knower and towards specific examples of ‘evidence’.

These two participants agreed that top-down interventions to encourage a change of values and behavior change can work, and have been demonstrated to work in recent Australian examples. Coming to this point of agreement involved two code shifts:

- from a *knower code* (Sam’s instinct as a conservative) to a *knowledge code* (considering disconfirming cases and causation and effect);
- from a *rhizomatic code* (the principle that people’s values change slowly while incentives can be changed quickly) to a *prosaic code* (specific Australian examples about racism and smoking).

As a contrast, the examples of clean energy and adaptation described in section 6.3.3 show how common ground disintegrated when a prosaic code co-occurred with a *knower code*, rather than a *knowledge code* in the example above. The remainder of this chapter considers examples in which participants either failed to find common ground or established common ground dissipated, and analyzes the cosmologies (codes and constellations) associated with these outcomes.

### **6.3.2 Failure to find common ground**

On at least two occasions during the roundtable, it appeared that participants had assumed a concept would be common ground but it turned out not to be: one was carbon pricing, the other “the collective legacy” and “future generations” as motivators for action. A constellation analysis demonstrates the way in which particular think tankers rejected the concept at the center of each example based on its (unwanted) placement in their own constellation when in fact it belonged in an opposing constellation.

In the following conversation about emissions trading schemes (here termed “carbon pricing”), it seems that Tim considered ‘market based’ instruments to be very different to the ‘free market’:

Tim: One of the big frustrations with carbon pricing, we could debate this to the end, is it reintroduces essentially industrial policy into the heart of the economy around picking w- ah, with, around to a certain extent helping individual industries and how they operate and everything else. ...how you design a market, and what is ultimately an artificial market {that doesn't essentially-

John: {Aren't all markets artificial?

Tim: Artificial markets are purely structured as government has, where they have created a permit or a license right, ... and depending on how you design that, some people win, some people lose, and how you stage that and the potential it has for political influence because ultimately it's entirely controlled by politicians.

In the interview, Tim elaborated on the ideological differences at the source of these different points of view:

Where I think ideology was lost was some people obviously, particularly in terms of carbon pricing, think that if you have some sort of a market based thing, because they don't understand free market or capitalism, think that's somehow a more compliant or legitimate measure, when in fact they don't understand that it's just a form of regulation, it's just using the technology of the market to do that, ...and also disingenuously trying to paint a free-market veneer or a semi-capitalist veneer over what is really big government and statism.

In other words, Tim is arguing that carbon pricing belongs squarely in the pro-intervention constellation. It is an unwanted intruder masquerading as a member of the anti-intervention constellation.

Based on the above and Table 6.1 that captures themes from other conversations, the tables below show relevant parts of John and Tim's constellations. It can be seen that all types of "market approaches" belong in John's 'good' constellation while Tim divides these into "market-based" instruments ('bad') and the "free market" ('good'). The difference between the two types of approaches helps to explain why progressives expect free marketeers to embrace carbon pricing, while free marketeers are perplexed as to why progressives cannot see why they reject it, based on the distinction between "market based" (pseudo-government) and "free market".

<b>In John's 'good' constellation</b>
"I strongly prefer market approaches": Government provides incentives and sets "a system of limits" within which private interests can respond as they see fit (as opposed to government prescriptions).

<b>In Tim's 'bad' constellation</b>	<b>In Tim's 'good' constellation</b>
"Big government and statism". "Market-based" instruments: government uses "the technology of the market" to implement "regulation" (i.e. prescriptions).	"Free market": government leaves the market to respond to climate change.

In a similar manner, the participants' common ground on communications around using a "your kids" frame disintegrated when David expanded this into Tim and Sam's opposing constellation. The following conversation began in response to Sam's suggested messaging to 'ordinary people' based on "your kids, think about your children, that sort of thing":

- 1 David: I think that's one of the most powerful not just about you and your kids although that's hugely powerful but, you know, the collective legacy we're handing down. I think that's a really strong latent one.
- 2 Tim: Arrrrh, I'm not sure I agree with that.
- 3 Sam: It's almost the discount effect.
- 4 Tim: And just also once you put things into collective legacy it's well where do I fit within that collective legacy,
- 5 Sam: Yeah.
- 6 Tim: whereas I think most Australians are more likely to respond to something, well this affects my child, than it does if it affects future generations. Future generations just means nothing.
- 7 David: I don't think they're either or, I don't think they're mutually exclusive. And I agree with you that the my child one is more powerful.

In line 7, David is effectively saying that he sees doing something for "your kids" and for the "collective legacy"/"future generations" in the same constellation, while for Tim and Sam they sit in opposing constellations (lines 2 to 6). Everyone could agree on "your kids", but with

“collective legacy” David transgressed into Tim and Sam’s ‘bad’ constellation. From other conversations it seems that it might invoke planning and intervening on behalf of the future (Sam’s “discount effect”) and ‘do gooders’ taking action for the public good rather than what is best for themselves and their families: the people they are directly responsible for looking after. So based on the above conversation and others, the constellations resemble the following:

<b>In David’s ‘good’ constellation</b>
Being motivated by concern for the future and for bigger-than-self reasons, for “your kids”, “the collective legacy we’re handing down”, “the public good”.

<b>In Tim and Sam’s ‘bad’ constellation</b>	<b>In Tim and Sam’s ‘good’ constellation</b>
Planning and intervening on behalf of the future (“discount effect”). ‘Do gooders’ taking action for the public good rather than what is best for themselves/families/things they are responsible for.	Focus on the present, on tangible things, and on things for which one has direct responsibility (“your kids”).

In addition, Tim’s comment about most Australians being more receptive to “my child” than “future generations” might be recognizing that most Australians are not like think tankers: they are more likely to exhibit a *prosaic code* (simple, concrete, context dependent, in the present) than think tankers’ *rhizomatic code* (complex, abstract, context independent including in the future). As such, things that are in the present, personal and tangible are likely to resonate with ordinary people, while “future generations just means nothing” (Tim).

In summary it appears that David committed two faux pas in trying to find common ground:

- *Constellation clash*: While the “your kids” idea fits within Tim and Sam’s ‘good’ constellation about looking after things for which one has personal responsibility, the concepts of “future generations” and “collective legacy” belong in their ‘bad’ constellation about looking after the future and the public good;
- *semantic code clash*: The “your kids” message is personal, tangible and set in the present and so fits participants’ constructions of the intended audience’s (ordinary people’s) *prosaic code*. On the other hand, “future generations” and “collective legacy”

are amorphous concepts related to the future (rhizomatic code). This represents a code clash with the prosaic code of ordinary people.

The following conversations, mentioned briefly in section 5.3, exemplify another kind of code clash (a specialization code clash) and a constellation clash. In these conversations one participant (Sam) argued that agreeing on clean energy would be “enough”, while others argued that this approach doesn’t go far enough (John) or fast enough (Miriam):

Sam: ...even if you think climate change, is a complete furphy<sup>29</sup> and a global conspiracy, if you can get energy cheaply and cleanly, and you’ve got a choice between that and doing it in a polluting way, of course anybody in their right mind is going to pick the clean one, and surely that’s all we need to agree on?

John: No.

Sam: I mean isn’t that enough?

John: No it isn’t actually, because you’ve got agricultural emissions,

Sam: {sure, sure

John: {you’ve got industrial emissions from industrial processes, ...[Energy generation] is only, I mean like it’s fifty per cent of our emissions.

The participants returned to this theme later in the roundtable:

Is it really all that fruitful to try to win this science debate anyway if we- I mean all we really need to agree on is that it would be a worthwhile thing to have cleaner energy. Wouldn’t that do? (Sam)

to which Miriam responded: “It would be a good start but it might not get us the speed of change that we need.”

On one level, the obvious difference between the participants’ contributions is the difference in their underlying specialization codes. Sam’s argument is about trying to find things that appeal to people from across the political spectrum. John and Miriam paint this as putting too much emphasis on satisfying people, by trying to resolve or work around the ideological differences without attending to the implications of the climate science evidence: the need for rapid emission reductions that are broad in scope, across multiple sectors. In this portrayal

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<sup>29</sup> “Furphy” is Australian slang for a rumour or story, especially one that is untrue or absurd (<http://www.oxforddictionaries.com/definition/english/furphy>)



Sam’s statements are seen to reflect weaker epistemic relations (ER–) and stronger social relations (SR+): a *knower code* (ER–, SR+). John and Miriam’s statements more strongly emphasize the climate science, reflecting stronger epistemic relations (ER–) and downplay Sam’s emphasis on social relations (SR–): a *knowledge code* (ER+, SR–).

On a deeper level, there appears to be a constellation clash at the root of these differences. It is clear from other statements both in and out of the roundtable and interviews that both John and Miriam support renewable (‘clean’) energy. Reading between the lines, what they are objecting to here is Sam’s implicit assumption that it is enough to *only* pursue clean energy, as something that can happen organically within existing structures with no radical change required, no further intervention required. In contrast, John and Miriam were arguing that clean energy does not go far enough, fast enough, and so further intervention is required to achieve the required emissions reductions. Hence the argument invokes the ideological differences based on preferred levels of government intervention, the basis of the constellations, with the differences depicted below:

Sam	John and Miriam
Clean energy is the answer, therefore no further intervention is required.	Clean energy does not go far enough, fast enough, therefore further intervention is required.

On a practical level, this means there are limitations to the translation strategy of finding solutions that suit public policy influencers who reject climate change (section 5.3.1), if those who accept the science see such solutions as being deficient, in not going far enough, fast enough. These differences, that have their basis in a specialization code clash and a constellation clash, would seem to limit public policy influencers’ ability to find common ground by pursuing such a strategy.

### 6.3.3 Disintegration of common ground

Some areas of common ground tended to “disintegrate”, as one participant put it, especially towards the end of the roundtable. Reflecting the adage that “the devil is in the detail”, participants recognized that shifting from abstractions (rhizomatic code) to more specific details and examples (prosaic code) reduced the potential for maintaining agreement. Early in

the roundtable, after a comment that “we clearly all have *roughly* the same, within broad parameters, definitions” of sustainability (Tim), another participant said:

Ahh, again perhaps we could dive in, it’s in the detail and the more we get into the detail the more the differences will emerge, because there are actually explicit things around definitions of sustainability, which is not impairing options for future generations and employing the Precautionary Principle that’s actually in the legislative definitions (John).

This statement recognizes that the more explicit and specific concepts might be more problematic for Tim, because of his anti-intervention constellation. In particular the Precautionary Principle, looking after future generations and intervening in systems rather than letting them run their course are likely to be antithetical to this constellation.

In a similar vein, towards the end of the roundtable, another participant observed that areas of common ground “seemed to disintegrate actually, under just a tiny bit of scrutiny” (Sam). This “scrutiny” involved unpacking concepts such as ‘we all accept mainstream climate science’ at the start of the roundtable, to the details of the science such as a maximum ‘safe’ level of warming of 1.5 to 2 degrees (John), and the inconvenient implications of that for climate responses. Two participants (John and Miriam) identified the need for heightened mitigation efforts and disagreement over “timeframes” as things that might limit areas of common ground, because of aspects that are antithetical to free marketeers/libertarians and conservatives. John said “we need to manage the unavoidable and avoid the unmanageable”, meaning both adaptation and mitigation respectively, and the latter is what might “put some limits on that potential area of common ground”. Although not said in so many words, the co-text provides John’s viewpoint that much more substantial mitigation efforts are required. It is also clear from the co-text that this was problematic for Tim as a free marketeer/libertarian and Sam as a conservative, to the extent that it requires government planning and intervention and rapid change. Thus it can be seen that these concepts are incompatible with their ideologies and are therefore likely to be rejected. Similarly, Miriam observed the “enormous potential for common ground between conflicting worldviews about what we need to do in the medium term” but that “one of the main things that might drive that to break down is disagreement over timeframes”. For the reasons discussed above, a rapid timeframe for action is likely be problematic for free marketeers/libertarians and conservatives if more top-down intervention is required to achieve this goal.

During the roundtable there were two notable examples of conversations in which participants found common ground and then it later disintegrated. The first of these concerned climate change adaptation, the second, government subsidies.

### ***Climate change adaptation***

Midway through the roundtable, the think tankers identified adaptation as an area of common ground between various groups of people including those skeptical about anthropogenic climate change:

See I think adaptation's a fascinating space because it's actually the common ground between- it doesn't matter what you think of the science, if you think it's natural climate change and everything else, you're going to need to concede eventually that actually we're going to need to adapt to a changing climate... (Tim).

Thus, Tim was projecting other voices in saying that everyone agrees humanity needs to adapt to the impacts of climate change. This sentiment was echoed by other roundtable participants, for example, "we actually don't have a choice about whether we do adaptation or not, we're going to have to do some adaptation" (Miriam) and "we have to manage the unavoidable" (John).

<b>Tim (projecting others' agreement)</b>
Humanity needs to adapt to the impacts of climate change

However the conversation took on a different tone at the end of the roundtable when Miriam asked "What does that look like in practice?", asking for the details:

Tim: ...what it will result in, in many cases is large amounts of public expenditure I imagine for adaptation if you had you know sea level rises,

Miriam: It could involve reduced levels of public expenditure in some cases like reduced assistance for rebuilding in floodplains? After natural disasters...

Tim: But we're talking about, I don't agree with these things in the first case, and so they are one of those things that could be lost. People have to live with the consequences of their decisions and they take a degree of risk in how they conduct themselves and ameliorating that by introducing public insurance is not

going to be a good public policy outcome. Yes you may be able to {save money doing it, but-

Miriam: {I mean I, I, was not actually arguing for that,

Tim: {No no,

Miriam: {(laughs) I was looking for some common ground there, maybe something that we could agree on, abolishing subsidization for rebuilding in floodplains.

Tim was not able to accept Miriam’s olive branch of reduced public expenditure because it was something he did not “agree with...in the first case” (from first principles). While Miriam differentiated between ‘good’ and ‘bad’ constellations by the *amount* of public expenditure or “insurance”, for Tim, the ‘good’ constellation comprised no public insurance at all because people should live with “the consequences of their decisions”:

<b>Tim’s ‘bad’ constellation</b>	<b>Miriam’s attempt to find Tim’s ‘good’ constellation</b>	<b>Tim’s ‘good’ constellation</b>
Adaptation involving “large amounts of public expenditure”; “public insurance”.	“Reduced levels of public expenditure”, “abolishing [some] subsidization”	No “public insurance”: “People have to live with the consequences of their decisions and they take a degree of risk”.

### **Government subsidies**

Midway through the roundtable, two participants (Tim and Miriam) were discussing whether market incentives were sufficient to facilitate emissions reductions. When Tim asserted that the problem was mainly one of the technologies not yet being developed, which will only happen over time, Miriam countered:

1 Miriam: Well in some cases the technologies are there and what we’re seeing, is you know as a result of some of that pump priming<sup>30</sup> by governments in response to a social problem, we’ve seen some technologies emerge that are now

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<sup>30</sup> Pump priming is “the activity of helping a business, programme, economy, etc. to develop by giving it money” (Cambridge Dictionary, 2012).

getting reasonably close to being cost competitive with some of the fossil fuel  
{options,

2 Tim: {Yeah.

3 Miriam: but we're seeing, the resistance to what is the potential for some old fashioned  
Schumpeterian destruction<sup>31</sup> by some of the major existing players, so  
obviously some of the fossil fuel companies have been investing pretty heavily  
in keeping the playing field tilted in their favour, and if you look at the level of  
subsidization globally, there's much more subsidization of fossil fuels than of  
{renewables,

4 Sam: {Yes.

5 Tim: {So we should abolish subsidies.

6 Miriam: (pause, then smiling) That could be one way of {doing it!

7 Tim: {(laughs).

In this example, the two participants were able to find something that was common to both of  
their constellations: to abolish subsidies of fossil fuels.

<b>Tim and Miriam</b>
Abolish fossil fuel subsidies to allow 'creative destruction' to proceed, so that clean energy technologies can supersede fossil fuel technologies.

It is perhaps no accident that Miriam chose the term "Schumpeterian destruction" in this conversation with Tim. While the term was born from and retains a Marxist sentiment that capitalism's creative-destructive forces would eventually lead to its demise, 'creative destruction' is also a central concept in free-market economics whereby the workings of capitalism should proceed unhindered, so as to allow for the evolution of new industries out of the old (Reinert & Reinert, 2006). As a rare breed of concept that appears to have been

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<sup>31</sup> "Schumpeterian destruction" refers to the concept of "creative destruction", associated with economist Joseph Schumpeter. It describes the "process of industrial mutation that incessantly revolutionizes the economic structure", in which the old is destroyed and the new is created (Reinert & Reinert, 2006).

adopted by both left-leaning and free market schools of thought, “Schumpeterian destruction” was able to fit within both Miriam’s and Tim’s constellations.

In contrast, at the end of the roundtable when I asked participants if they could find common ground and suggested that earlier in the roundtable there had been some agreement around “abolishing subsidies”, the common ground seemed to dissipate. In the following conversation, Miriam and John arrived at an emissions trading system, a heftier target and a mature carbon price, which were all firmly outside Tim’s constellation:

- 1 Tim: But abolish subsidies for whom? (hands up, slight shrug)
- 2 David: (shaking head) No, no I-
- 3 Eleanor: No? Sorry, it wasn’t?
- 4 David: I think you still need to subsidise renewables that are producing a {social-
- 5 Eleanor: {(gestures to Sam) Pump priming, yeah,
- 6 David: Yeah (gestures to Sam)
- 7 Sam: ...I would be in favour of killing subsidies on all sides but funding basic science. You know the applied science leave it up to the market to fund the applied stuff, but fund basic science.
- 8 John: And I think you need your public and private policy to get that mixed portfolio of clean energy options up, and it’s clearly perverse to be continuing subsidies of fossil fuels
- 9 Sam: {(nodding) Yeah
- 10 John: {out of the public purse.
- 11 Tim: (hands up, slight shrug) Of course!
- 12 Miriam: I, {I’d-
- 13 Tim: {Define a subsidy though.
- 14 (Eleanor, Miriam chuckle)
- 15 David: Maybe that’s not an area of consensus.
- 16 Miriam: I’d be pretty happy with abolishing all subsidies if the funding for basic science extended to demonstration, you know so, some kind of bridging finance for commercialization,
- 17 Sam: (nods)

- 18 Miriam: which we have a bit of a problem with in Australia, the gap between getting to demonstration and then actually getting to scale is pretty big, (pointing pen towards John) but, only if you actually had a cap and trade scheme that was based on a target that was a bit heftier than the one that we've currently got.
- 19 John: A mature carbon price will solve all these problems, Tim! (pats Tim's shoulder)
- 20 Tim: (dips head towards John) How very mature!

An analysis of Semantics reveals much more unpacking of the concept of abolishing subsidies in this conversation than in the earlier one between Tim and Miriam. Delving into the specifics involved adding caveats to ensure that the proposals were compatible with one's constellation, as Miriam did in line 18 by adding a cap and trade scheme with a "heftier" target. This is presumably because the point at which she arrived in line 16 still relied too heavily on leaving things to the market to belong in her pro-intervention constellation. This conversation also asked for a higher level of commitment from participants than in their earlier, more open-ended and abstract explorations of ideas. At the end of the roundtable I explicitly asked participants to identify areas of common ground or consensus, which required each person to state their agreement or otherwise with each other's statements. Whereas in the earlier conversation Tim and Miriam were able to leave "abolish subsidies" at a high level without further interrogation, or with an implicit awareness that there might be some caveats attached, when it came time to sign up to common ground at the end everyone became much more concerned with definitions and boundaries, almost legalistic as in Tim's "define a subsidy". This was much more in keeping with their usual conduct as think tankers in the public sphere, as the researcher became aware when reviewing recent media content prior to the roundtable.

In the final roundtable conversation reproduced above, participants moved away from an earlier, simple position of actual or tacit agreement on abolishing fossil fuel subsidies, to three distinct positions incorporating related concepts about government intervention that were raised when debating the details of the proposal. It can be seen that these three positions match the three constellations described in Table 6.1:

<b>Miriam, John, David</b>	<b>Sam</b>	<b>Tim</b>
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<p><i>Pro-intervention:</i> Support pump priming, government funding to commercialization, a “cap and trade scheme”, a government-set “heftier” target, a government-set “carbon price”.</p>	<p><i>Minimal intervention:</i> Fund only basic science, leave applied science to the market. Ambiguous or shifting position on pump priming, cap and trade, carbon price.</p>	<p><i>Anti-intervention:</i> Opposed to cap and trade, carbon price and government-set target because all are government interventions.</p>
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A recurring pattern becomes clear in all of the above conversations, regardless of whether the focus was on climate science and “timeframes” for climate action, climate change adaptation, or abolishing subsidies. Where participants reached agreement early or midway through the roundtable, this was generally on the basis of a ‘high level’, generalized concept that thereby exhibited a *rhizomatic code*. Their later discussions on the specifics of what these meant in practice represented a code shift to a *prosaic code*.

Participants’ lines of argument were based on their axiological (knower code) constellations that were based on ideological differences. This meant that going into specifics, shifting from a rhizomatic code to a prosaic code, tended to show up these ideological differences and opposing constellations, making it more difficult to maintain areas of common ground.

Returning to the areas of common ground identified in section 6.3.1, given the above analyses it is now clear how and why common ground later disintegrated or its limits became apparent. These were associated with legitimation code shifts that caused code clashes and constellation clashes, in the following ways:

- *Acceptance of mainstream climate science* – later in the roundtable the implications of the *details* of the climate science put some strain on the common ground, as the implications for rapid, widespread change fitted pro-intervention ideologies (constellations) more so than those that were anti-intervention.
- *The need for both climate change mitigation and adaptation* – the need for greater mitigation efforts was identified as a limitation on common ground, again because of the implications for further government intervention that is incompatible with an anti-intervention constellation.



- *“Clean energy” is one of a suite of solutions, and new technologies will play a role in mitigating climate change* – while this high level agreement remained, participants’ evaluations differed on the strategy of only pursuing a clean energy solution. It was valorized as having broad appeal across the political spectrum even amongst those who reject climate change (knower code), or devalorized as being unable to deliver the required speed and scale of emissions reductions (knowledge code).
- *Climate change represents a market “externality”* – Participants were able to agree on this as a problem but could not agree on solutions. Again, their disagreements were rooted in the constellations relating to preferred levels of intervention. While four participants expressed support for carbon pricing to address the externality, the fifth described climate change as a ‘wicked problem’ and implied that it was too complex and difficult to intervene effectively: “well you can say there’s externalities but they’re global externalities ...how do you design something somehow that can be top down and actually have an influence and try and change behavior, and I think it’s a truly wicked public policy challenge” (Tim). The interventions to fix the market externalities might have worse impacts than the externalities themselves.
- *Governments should abolish subsidies to fossil fuel industries* – as described, the common ground disintegrated when participants investigated the specific details and their relationship to the ideological constellations.
- Other concepts such as the need for climate change solutions to be “socially tenable” and for communications to convey “opportunity”, were raised early on in the roundtable and not returned to, perhaps raised as aspects of solutions that were yet to be fully worked out. Participants did not delve into what these concepts might mean in practice, and so a kind of high level agreement on such concepts remained, unexplored.

#### **6.3.4 Summary of common ground analyses**

Sections 6.3.1 to 6.3.3 analyzed the links between participants’ cosmologies (legitimation codes and their resultant constellations of stances) and their success or failure in finding common ground. Across a range of examples, common ground tended to form when a concept was seen as being compatible with multiple constellations. It tended to form when a knowledge code (emphasizing evidence) occurred together with a prosaic code that offered concrete and specific evidence to analyze and debate rather than abstract theories and generalizations. The converse was true when the conversations were underpinned by a knower

code. Here, common ground tended to form when the concepts under consideration were in a 'high level' and generalized form – a rhizomatic code. In this form, abstractions could be interpreted in a number of different ways that could fit within more than one constellation. The differences between the knower code and knowledge code scenarios show that it is not semantic codes alone that are important in finding common ground but the interaction between semantic codes and specialization codes.

Attempts to find common ground tended to fail when the person proposing an area of common ground assumed that it would fit others' constellations but it did not. Previously-found common ground tended to disintegrate when a knower code co-occurred with a shift in focus from abstractions that could be interpreted in a variety of ways, to specific, concrete examples that revealed differences between constellations (ideologies). In other words, this represented a code shift from a rhizomatic code to a prosaic code.

Finally, there were contextual factors relating to participants' level of commitment to statements and implications post-roundtable that had a bearing on finding common ground. It seemed that participants were willing to weaken the ideological basis at times during the roundtable to explore possibilities, but then they returned to a relatively strong ideological basis at the end when they were about to return to the 'real world'. Analyzing such contextual factors was beyond the scope of this research. Nevertheless their existence is acknowledged and they would appear to be important to consider in facilitating such forums.

With more time, and if motivated to formulate a statement of common ground, participants might have been able to agree on abolishing fossil fuel subsidies as a single, isolated policy initiative that rests on allowing Schumpeterian creative destruction to proceed. The problem is that due to the nature of constellations, such a policy cannot be considered a single item in isolation: one concept brings with it related concepts in the constellation. So based on participants' constellations identified in Table 6.1, abolishing fossil fuel subsidies to facilitate the transition to clean energies is conceptually linked with other policy levers aimed at facilitating this transition, such as carbon pricing. These measures are supported (legitimized) by those in the pro-intervention constellation and are opposed (delegitimized) by those in the anti-intervention, free market constellation.

As an alternative, the think tankers could start with the science and each argue for solutions from their ideological positions, as suggested by one of the interviewees. However, they would need a way of adjudicating the arguments that was ideologically agnostic and that valorized the evidence, to adopt the most effective policy approaches to meet given goals. The problem as participants identified is that this currently does not exist. The political and public spheres do not valorize the rational and the evidential: they are dominated by a *knower code* (ER–, SR+). Even as public policy influencers, the think tank participants recognized that they sometimes operate by a knower code. Amongst other things, coming to agreement on climate change policy initiatives would require a shift to stronger epistemic relations: to an *elite code* (ER+, SR+) or a *knowledge code* (ER+, SR–).

#### **6.4 CONCLUSION**

This chapter investigated think tankers' constellations and their negotiations of climate change views. It began by describing the way that participants' solutions or policy preferences were associated with one of three constellations of stances. The constellations were divided and bounded on the basis of participants' preferred levels of government intervention, which reflected their political ideologies (a knower code). As a rule, the think tankers argued from the standpoint of their ideology, their constellation. Some offered 'olive branches', concepts that might fit within other participants' constellations (such as Miriam's "reduced public expenditure" offering to Tim), but only to the extent that these still matched their own constellation.

Common ground, in this case a solution that two or more participants supported, was found when the solution fitted their constellations. For example, when a solution was compatible with both pro- and anti-intervention constellations, then it could potentially be accepted by participants coming from these opposing viewpoints. Common ground also tended to be based on concepts expressed in a 'high level' and generalized form – a rhizomatic code. In this form, abstractions could be interpreted in a variety of ways that could fit within more than one constellation. Attempts to find common ground tended to fail when the think tanker proposing an area of common ground assumed that it would fit others' constellations but it did not. Previously-found common ground tended to disintegrate when the think tankers shifted from abstractions that could be interpreted in a variety of ways (rhizomatic code) to specific, concrete examples that revealed their ideological differences (knower code, prosaic code).

These ideological differences formed the basis of the constellations and so the absence or disintegration of common ground represented a constellation clash. As in the Rotary case, the analyses in this chapter demonstrate the importance of the cosmologies in finding common ground, or not.

While participants are not case studies, the differences in their ideological stances and the specialization codes they tended to exhibit had implications for the types of solutions they supported and the way they contributed towards finding common ground, or not. As participants acknowledged, and as articulated in the literature, the rapid and widespread responses to climate change that the science implies are required tend to be more compatible with a pro-intervention than with an anti-intervention position. As an expression of this difference, the one participant who proposed a knower code solution (i.e. potentially foregoing emissions reductions if in conflict with ideological preferences), consistently argued from an anti-intervention position.

This chapter points to several insights gained through the LCT analyses. Identifying the organizing principles (cosmologies) of think tankers' common ground is significant because it enables generalizability through theory (see section 3.7). Specifically, it enables portability of the findings from happenings in the roundtable to what might happen more generally amongst other public policy influencers. The findings suggest that coming to agreement could be facilitated by shifts towards stronger epistemic relations, to an elite code or a knowledge code, as well as societal and institutional changes beyond think tanks. The findings also have implications for the sequencing of CCC&E, namely to start with the more general and abstract (rhizomatic code) and work towards specifics (prosaic code). Together with the insights from the literature, the Rotary and think tank findings form the foundations for developing CCC&E principles for lay audiences and public policy influencers respectively (chapter 7) and for making recommendations for CCC&E (chapter 8).

## **CHAPTER 7: PRINCIPLES FOR COMMUNICATIONS AND ENGAGEMENT**

### **7.1 INTRODUCTION**

The literature review (chapter 2) identified two major CCC&E strategies known as translation and transformation, and identified many methods for segmenting and tailoring climate change communications and engagement (CCC&E) to target audiences, for example on the audience's psychographic attributes (e.g. values) or socio-demographic attributes (e.g. gender, age). It also identified that an opportunity exists to identify the organizing principles of translation and transformation strategies, in order to understand what is being matched in translation and shifted in transformation.

This chapter performs two functions. Firstly, it consolidates chapters 4 to 6 by summarizing, comparing and contrasting the Rotary and think tank findings, including patterns that emerge from the examples of participants' common ground (7.2). It then turns to the implications of those findings for CCC&E practice, taking the Rotary participants as a microcosm of lay people in the wider Australian community and the think tankers as a microcosm of public policy influencers (though I return to this question in chapter 9 as a possible issue for further research). In this way the analysis is brought up a level, out of the specifics of the Rotary and think tank conversations as reported in chapters 4 to 6. Secondly, the chapter addresses the opportunity identified in the literature review by developing a framework for CCC&E that is built on a reconceptualization of CCC&E principles and strategies in terms of their cosmologies. It raises the possibility of systematically segmenting audiences on their cosmologies and tailoring CCC&E accordingly.

The steps in developing the principles, beginning with establishing goals for CCC&E, are described in 7.3. Section 7.4 begins by revisiting the main CCC&E approaches identified in the literature review to identify relevant principles for CCC&E. It also introduces LCT-related principles that are relevant to CCC&E practice, including the concepts of code match and code clash and the idea that the message, the medium and the messenger all matter. The remainder of the section outlines translation and transformation strategies for lay audiences and public policy influencers, by considering what translation and transformation mean for each audience based on their cosmologies. Finally, strengths and limitations of each strategy are assessed.

## 7.2 ROTARY AND THINK TANK FINDINGS

This section summarizes the previous three chapters' findings on the Rotary and think tankers' cosmologies (legitimation codes and constellations) and the similarities and differences in the way each group came to find common ground, or not. An important finding was the central importance of each group's cosmology in their conversations about climate change. This was evidenced in the way that agreement among participants on the importance of climate change tended to be reached and common ground on solutions found when they matched cosmologies. This section begins by comparing and contrasting the two groups' cosmologies and then identifies some patterns and conclusions that emerge from the examples where they found agreement and common ground.

### 7.2.1 Cosmologies

A major difference between the Rotary and think tank groups was that their constructions of climate change were underpinned by different cosmologies, as illustrated in Figures 4.1 and 5.3. With a few exceptions, the Rotary conversations were generally underpinned by a *knower code* and a *prosaic code*. The knower code was manifested in the way that they constructed a binary world of 'good' and 'bad', with judgments made on the basis of their self-proclaimed group memberships (such as being Christians and Liberal voters) and in accordance with their trusted sources' statements. These judgments formed the basis of two axiological constellations of concepts related to climate change in a binary 'good and bad' structure. They tended to dismiss or downplay knowledge that was based on stronger epistemic relations, particularly climate science which could not be verified by participants themselves.

The Rotarians' constructions of climate change were epistemologically sparse with weak explanatory power, yet they were axiologically rich. Even though the structure of the constellations was a simple, 'good and bad', 'us and them', there was much axiological content or richness within these constellations: they were comprised of a large number of concepts that were positively or negatively evaluated. This axiological richness is important to acknowledge and represents a resource to employ in CCC&E.

In relation to Semantics, they spoke about simple, local, tangible realities and preferred actions that would address perceived priorities in the present, almost to the exclusion of those in the future, which are both features of a prosaic code.

In contrast, the think tankers shifted between three specialization codes (*knower, elite* and *knowledge codes*) depending on the aspect of climate change being discussed. While all think tankers constructed climate science as having strong explanatory power (knowledge code), they differed in their own scientific knowledge practices. Two think tankers' basis for knowing about climate science was underpinned by a knowledge code and the others' by a knower code. The latter lacked much explanatory power (the power of climate science to explain climate change itself) and instead think tankers chose sources on the basis of compatibility with their political-ideological positions. Talk of climate solutions tended to evoke one of three constellations that were demarcated on the extent to which government intervention was seen as an appropriate response to climate change, which in turn reflected the think tankers' differing political ideologies. Further, the degree to which their proposed solutions were informed by the climate science and underpinned by an elite code rather than a knower code was connected to their political-ideological positions: the need for more urgent and significant societal responses in order to keep within a 2 degree temperature increase was more compatible with a position that supported government intervention than with support for maintaining the status quo or incremental "organic" change through the market. In sum, the think tankers' political ideologies represented the biggest difference between them and a major challenge to finding common ground.

Unlike the Rotarians the think tankers spoke mostly about abstract and intangible theories and concepts and they spoke about both the present and the future. These characteristics point to the think tankers sharing a *rhizomatic code* (abstract and complex). This was the commonality between them, the glue that held the ideologically-charged conversations together. They also demonstrated that they were able to shift to a prosaic code when talking about lay people and the kinds of CCC&E that they suggested would resonate with those audiences.

In the two engagement events there were several illustrative examples of the ways in which the two groups' constructions of climate change responses reflected their differing cosmologies. The Rotary participants generally advocated for responses to directly reduce emissions, for example by installing local and tangible household solar power (a prosaic code). In contrast the think tankers focused on addressing the problems of the climate change debate including the culture wars that make climate change a difficult issue to deal with, and the need

for high level, systemic changes to the 'rules of the game' (a rhizomatic code). The closest the Rotarians came to talking about such concepts was about the need to change people's "consciousness" and "mentality" that would then lead to tangible, local, individual behaviors such as fixing things instead of throwing them out. Thus they rapidly returned to solutions that were underpinned by a prosaic code.

The differences can also be seen in the way the two groups talked about governments facilitating action. The Rotary participants advocated for government assistance to fund "the little steps that are required" such as community goods recycling centers, and councils providing household recycling bins as facilitating people's efforts to "do the right thing". In contrast, one of the think tankers described climate change responses as requiring "considerable government agency, which is probably a combination of funding and government regulation, market design" to facilitate entrepreneurs and innovators having the incentives and means of delivering solutions. While both groups talked about governments facilitating action, in the Rotary examples this entailed funding tangible items like bins and facilities to reuse physical household goods (prosaic code). These actions also centered on individuals and community groups *being good citizens* by "do[ing] the right thing" (knower code). In the think tank examples it was about putting in place the required *structures and incentives* (rhizomatic code).

Finally, on carbon pricing (the "carbon tax"), the Rotary participants' basis of opposition was at the personal level, about the government taking money from individual people, and about individuals spending their compensation money on poker machines. By equating the carbon price with Labor Prime Minister Julia Gillard they gave the abstract concept a name and a face and a basis on which to assign it to the 'them' constellation. They also said that it was unfair because it let 'dirty' polluting countries like China and India off the hook while 'clean' Australia was penalized. In these examples they turned the abstract, impersonal concept of carbon pricing into concepts that were personal, related to fairness and morals, and more tangible in terms of giving and spending money, poker machines, individual politicians and countries described as if they were individuals. Thus their constructions were underpinned by a knower code and a prosaic code.



In contrast, four of the think tankers supported the carbon price as shifting governance and incentive systems in the right direction towards climate action. These are abstract, interconnected concepts that reflect a rhizomatic code. The fifth think tanker (Tim) voiced his opposition to carbon pricing on the basis that it was a meddling intervention trying to shift the market, that is, based on his ideological opposition to government intervention. This is a very different basis of opposition to the Rotarians'. He also suggested that the carbon price would have very limited impact on what was a global externality. Again, his conception of global externalities and the challenges of devising systems to incentivize countries to act reflect a rhizomatic code while the Rotarians' constructions of countries as individual people doing the right or the wrong thing, being 'clean' or 'dirty', reflect a knower code and a prosaic code.

The differences in semantic codes in this example highlight the different expressions of social relations in the two groups. The think tankers' constructions were based on abstract and theoretical political ideologies that were underpinned by a rhizomatic code. Rotary's were personal and tribal, based on what trusted sources said and the fairness or unfairness of countries' actions with countries conceived of as individual people: a prosaic code. In short, the two groups' ways of knowing about climate change differed markedly and these differences were mirrored in their constructions of the issue and solutions to it.

### **7.2.2 Finding agreement and common ground**

The findings of chapters 4 to 6 can be summed up by: *it is the cosmology that matters*. It is not the climate change subject matter that determines acceptance or rejection but the *legitimation codes* and associated constellations that underpin the subject matter. For example, the Rotary participants accepted climate change as a problem rather than a hoax and accepted climate responses when they were spoken about in ways that matched their knower code and prosaic code. Conversely they were rejected when underpinned by a knowledge code and rhizomatic code. In this way, climate change was in the 'good' constellation when the codes matched those of the participants and in the 'bad' constellation when they did not. This also means that it is misleading and limiting to label them as climate change deniers.

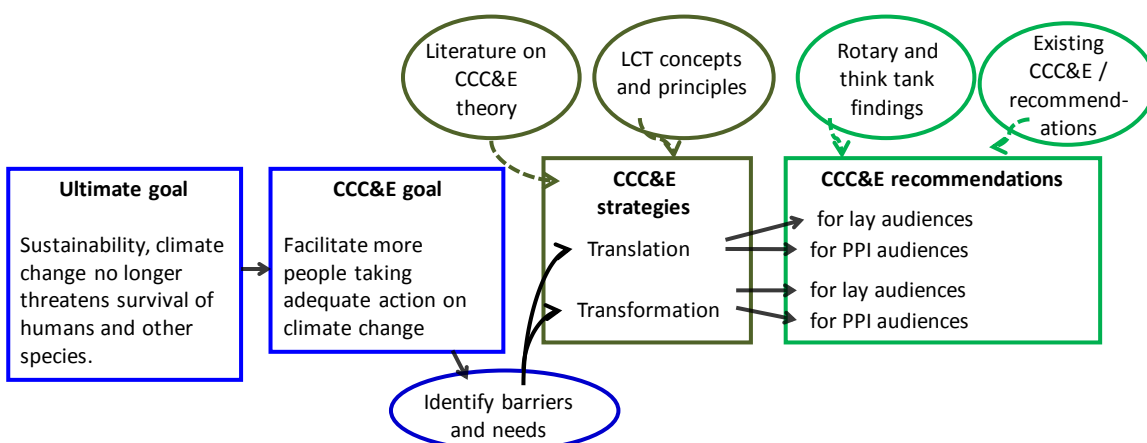
In line with this finding about the importance of legitimation codes, both the Rotary and think tank groups tended to find common ground on solutions when they matched their legitimation codes and the constellations generated by those codes. For the think tankers, talk of climate solutions tended to evoke the constellations based on political-ideological preferences for

particular levels of government intervention. They were able to agree on solutions that fitted in two or more of their constellations and they disagreed on solutions that did not.

The findings about the importance of cosmologies in shaping support for climate action present enormous opportunities that have not yet been realized to engage the ‘unusual suspects’: both lay people and public policy influencers outside the political left and the government intervention constellation. These ideas are picked up in section 7.4 and chapter 8.

### 7.3 APPROACH TO CCC&E ANALYSIS

The approach taken to the analysis in this chapter is shown in Figure 7.1. The first steps shown on the left-hand side of the figure were to establish an ultimate goal, a CCC&E goal and some barriers to achieving this that could be (partially) addressed by CCC&E. As a function that facilitates and motivates action, CCC&E is one of the elements that can contribute towards achieving the ultimate goal of sustainability in which climate change no longer threatens the survival of humans and many other species. Likewise, LCT principles are one aspect of the CCC&E strategies of translation and transformation as described and reconceptualized in this chapter. Section 7.4.1 gives some more context in this regard, situating LCT within a broader framework of principles from existing CCC&E approaches (both shown as inputs at the top of Figure 7.1). Having identified suitable CCC&E strategies, the analysis then draws together the Rotary and think tank findings as well as examples in the literature to make CCC&E recommendations for lay audiences and public policy influencers.



**Figure 7.1: Analytical process for developing CCC&E recommendations for lay audiences and public policy influencers**

The CCC&E goal that is taken as the basis for this chapter is to facilitate more people taking adequate action on climate change, meaning mitigative action to limit the global temperature increase to 2 degrees Celsius (see section 1.3). In Australia and globally, net emissions continue to rise rather than fall and humanity is on the path to overshoot the IPCC's 2 degree guardrail. Clearly, much more substantial action towards this goal is required. Reflecting the centrality of both epistemic and social relations in addressing the issue of climate change, the actions need to both reduce emissions and be socially acceptable, that is, fit people's desires, political ideologies and other expressions of social relations so as to be willingly carried out. In this chapter the focus is on two groups of agents, lay people and public policy influencers, as reflected in the two groups involved in the present study, and on the communications and engagement strategies that could be employed to encourage them to take action towards adequately responding to climate change in whatever form that may take. The many different types of action undertaken by many other agents are not of central concern to the present study and are not described here.

In this chapter I attempt to move away from the terms "believers" and "skeptics" or "deniers" which chapters 4 to 6 show are partial and misleading (and sometimes even irrelevant to whether or not people take action as shown by Rogers et al (2012) and others). Instead I shift the focus from whether or not climate change is happening to the actions being taken by using the terms climate "doers" to mean those who are taking and advocating for action and "resisters" meaning those who are not. This implies a particular need to improve CCC&E for climate resisters to find ways their concerns and motivations can be met. As described earlier, in Australia the division over climate change tends to run along party-political lines, meaning that many (but not all) resisters are conservatives and free marketeers and so in this analysis there is an emphasis on messaging that is likely to appeal to them.

The literature covered in chapter 2 as well as the study findings described in chapters 4 to 6 point to two types of barriers that tend to act against people taking substantial action, that would need to be considered and addressed in CCC&E strategies. The first is a failure to perceive climate change as a current threat deserving of action. As examples, this includes the 'so what if it's two degrees hotter?' sentiment in the Rotary conversations, a reflection of the knower code and a prosaic code that underpin their knowledge practices. For public policy influencers, a perception that climate change does not pose a current threat might rest on

ideological convictions, for example that the market will solve the problem in due course. This reflects a strong political-ideological basis, or relatively strong social relations, underpinning their knowledge practices. The second barrier relates to a perception of climate change responses (solutions) as threatening or challenging, which results in assigning the responses to a negatively evaluated constellation.

In LCT terms, both types of barriers reflect code clashes. The nature of the clashes and the strategies to address them are further explored in the following sections. In summary, they can be addressed by communicating climate change in ways that meet people ‘where they are’, that is, code match (translation), or by facilitating movements in ‘where they are’ through a code drift or code shift (transformation), or both. In general terms, it means recasting climate change as a threat but one that can be dealt with in ways that are acceptable to the audience.

In addition to these types of barriers are systemic and structural drivers and constraints such as the goals of economic systems that filter through to regulations and subsidies and other financial incentives to influence individual and business activities. The phenomenon of “socially organized denial” (Norgaard, 2006) similarly operates at a societal level. Addressing these drivers and constraints is largely beyond the scope of this thesis; they are briefly touched on in section 7.6, Beyond CCC&E.

#### **7.4 CCC&E PRINCIPLES AND STRATEGIES**

This section identifies the principles and strategies that can be employed to contribute towards meeting the CCC&E goal described in the previous section. It begins by briefly revisiting the main approaches to CCC&E that were described in the literature review (chapter 2) and their relationship to LCT principles. It then identifies some LCT-related principles that are relevant to CCC&E practice, including the concepts of code match and code clash and the idea that the message, the medium and the messenger all matter.

The section then expands the chapter 2 findings on the two main CCC&E strategies that can be employed, namely translation and transformation, describing how these strategies work in detail in LCT terms. Some examples from the Rotary and think tank engagements are given to illustrate the mechanics of each strategy. More specific examples of translation and

transformation as they apply to lay and PPI audiences are discussed in sections 7.5.1 and 7.5.2 respectively.

It is worth noting upfront that the question of whether to pursue translation, transformation or both mirrors contemporary debates in the field of education about whether to change students' dispositions to match the pedagogy, change the pedagogy to match students' dispositions, or provide students with means of gaining access to the pedagogy (Maton, 2014). These parallels are instructive because they show the value of LCT in making explicit the code clashes that are at the heart of both the education and climate change debates, and therefore the code match or code shifts that communicators and engagers seek to facilitate. Secondly, it is worth pointing out that such questions about the best strategies to employ are not settled and would benefit from further experimentation and empirical research.

#### **7.4.1 Principles from LCT and CCC&E approaches**

As indicated in Figure 7.1, the principles and strategies developed in this chapter take on board LCT concepts as well as existing CCC&E approaches described in the literature.

Chapter 3 introduced the LCT concepts of code match, code clash, code drift and code shift. These are returned to here and in the following sections describing translation and transformation. The overarching implication of the LCT concepts for CCC&E practice is that the **message**, the **medium** and the **messenger** all matter.

The **message** is the subject matter content. Its effectiveness in reaching the audience depends in large part on matching the audience's cosmologies (codes and constellations). For example, talking to Rotary about household solar power (in their 'good' constellation) is more likely to be accepted than talking about wind power (in the 'bad' constellation).

The **medium** refers to the legitimisation codes that underpin the message. The medium can vary independently of the message: for example one could promote the benefits of solar power to Rotary or other lay audiences in ways that were underpinned by a knowledge code and rhizomatic code, thereby clashing with the audience's knower code and prosaic code. The message would therefore be at risk of being rejected by the audience. An example might be: "By 2050, solar farms in Morocco could produce 20 GW of Europe's electricity", which is based on science and objective measures of electrical output (knowledge code), is distant in time and

space, uses an abstract measure and is about predictions rather than present certainties (rhizomatic code).

The **messenger** delivers communications to an audience or engages people in climate responses.<sup>32</sup> The messenger's effectiveness depends on whether that person is perceived to be 'one of us', who 'speaks' the same language, that is, matches the audience's codes and constellations. Effective messengers might be peers from the same group, or other trusted sources outside the group as occurred in the Rotary conversations.

The CCC&E literature was introduced in chapter 2 and certain aspects are expanded on here. Audience segmentation is the practice of identifying and dividing audiences into separate categories based on the audience's characteristics. The principle behind this is that certain characteristics of an audience shape the effectiveness of CCC&E, that is, its acceptance by the audience and ability to influence that audience to take subsequent action. Segmentation thus allow communications and engagements to be appropriately tailored to the audience for maximum impact. Some approaches segment on the basis of demographics that have been shown to be correlated with climate change beliefs, values, attitudes and behaviors, while others segment on cultural groups, for example using Grid Group Cultural Theory. The LCT concepts of code match and code clash imply that different messages are needed for audiences with different cosmologies (codes and constellations). Thus, audience segmentation on the basis of cosmology could be a fruitful concept.

There are a number of CCC&E recommendations in the literature that are taken into account in the strategies articulated in this chapter and the recommendations in chapter 8:

- The 'information deficit model' is ineffective. Simply providing the facts to those who reject climate change is unlikely to change their opinions.
- Similarly, climate literacy (knowledge of climate science) by itself does not necessarily translate into action. However, without an understanding of the significance and

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<sup>32</sup> I use the terms "audience" and "messenger" particularly as they relate to one-way communications in many forms of mass media, politicians' statements, NGO campaign messages and static websites. In community engagement forums I recognize that communications are usually two-way and so these roles are fluid: the "audience" becomes the "messenger" and vice versa.

urgency of the problem, public support for more substantial responses seems unlikely (Moser, 2010).

- Fear-inducing messages should be avoided unless also highlighting agency and concrete actions that people can take (e.g. O'Neill and Nicholson-Cole, 2009).
- Appeal to 'intrinsic values' such as responsibility and serving the community; avoid appeals to 'extrinsic values' such as wealth, for example in appeals to save money by saving energy (Crompton & Kasser, 2009).<sup>33</sup>

LCT can be employed as a stand-alone alternative or a complementary approach that both helps to explain phenomena by identifying their organizing principles (legitimation codes) and sheds light on different dimensions of creating effective CCC&E. For example, while the literature identifies a disconnect between climate science and lay people's understanding of it based on lived experience and trusted sources, LCT provides a reason: these knowledge practices are underpinned by different legitimation codes, resulting in code clashes. The recommendations in the climate change communications literature to "know your audience" and "speak to your audience" still hold; LCT expands the types of things being known about each audience. In a similar way to Common Cause identifying some values (intrinsic values) as being more conducive to taking action on climate change (Crompton & Kasser, 2009), so too LCT demonstrates the way that some cosmologies are more conducive to understanding and taking adequate action on climate change. These are the cosmologies based on stronger epistemic relations (knowledge code and elite code) and a rhizomatic code that enable an understanding of complex and interconnected systems. In these ways LCT provides other, complementary dimensions for devising effective CCC&E to facilitate more substantial action on climate change.

#### **7.4.2 Translation**

This section and the next reintroduce the concepts of translation and transformation as described in chapter 2 and reconceptualize them in LCT terms. In the literature, concepts similar to translation and transformation are conveyed using the metaphor of speaking different languages about climate change, as in Hoffman's (2011b) reference to groups "talking

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<sup>33</sup> The 'Common Cause' values framework is built on empirical research by (Schwartz, 1992) and other psychologists. It finds that 'intrinsic values' are strongly associated with care for the environment and action on causes such as climate change, while 'extrinsic values' are associated with a lack of concern and action.

past each other". This phenomenon can be reconceptualized using LCT as a code clash between the knowledge code of climate science and an ideological battleground underpinned by a knower code. Metaphorically speaking, if the problem lies in different groups speaking different languages about climate change, then the question becomes how we can recognize these and translate between them, or learn to speak multiple languages, or change languages. In this vein the strategy of translation involves the communicator translating between languages on behalf of the audience, or in LCT terms, matching the audience's codes. Brown and Riedy (2006, p.666) define translation as designing messages to "connect with people just as they are, motivating and informing them in a way that is in alignment with how they already see the world." On the other hand, transformation requires the audience to learn to speak multiple languages and shift between them, or at least to adopt useful features of the new language, analogous to the organic evolution of hybrid languages such as Creole or Pidgin English. For example for lay people who share a knower code and a prosaic code, this would entail a movement towards a knowledge code and a rhizomatic code (code drift), so as to be better able to understand and act on climate change.

A variant on the climate change translation strategy is to avoid mentioning climate change (here termed 'non-climate translation'). The audience is encouraged to take action for other reasons, where that action also serves to address climate change in some way. Examples in the literature include appeals to energy independence and security, epitomized by the CarbonNation film (see section 2.5.1). The strategy involves activating motivations that do not necessarily require the audience to accept climate change or the need for action. It represents a solution to the code clash and constellation clashes on climate change. In particular, it avoids the 'baggage' that is triggered when people hear the term 'climate change' within the context of the polarized, politicized debate that exists in Australia and some other countries. It dissolves that element of the resistance to climate change and climate action, as well as motivating action by promoting the individual and collective benefits of taking actions such as switching to renewable energy, as mentioned in the think tank roundtable. When the Rotary participants mentioned other motivators (e.g. teach children to respect nature, then they will plant more trees) it was unclear whether these were intended to serve climate change ends or not. The concept of "sustainability" that I introduced in the Rotary interviews proved to be another way to get around the negative associations with climate change. In contrast to climate change, sustainability was clearly in the interviewees' positively evaluated constellation: they described



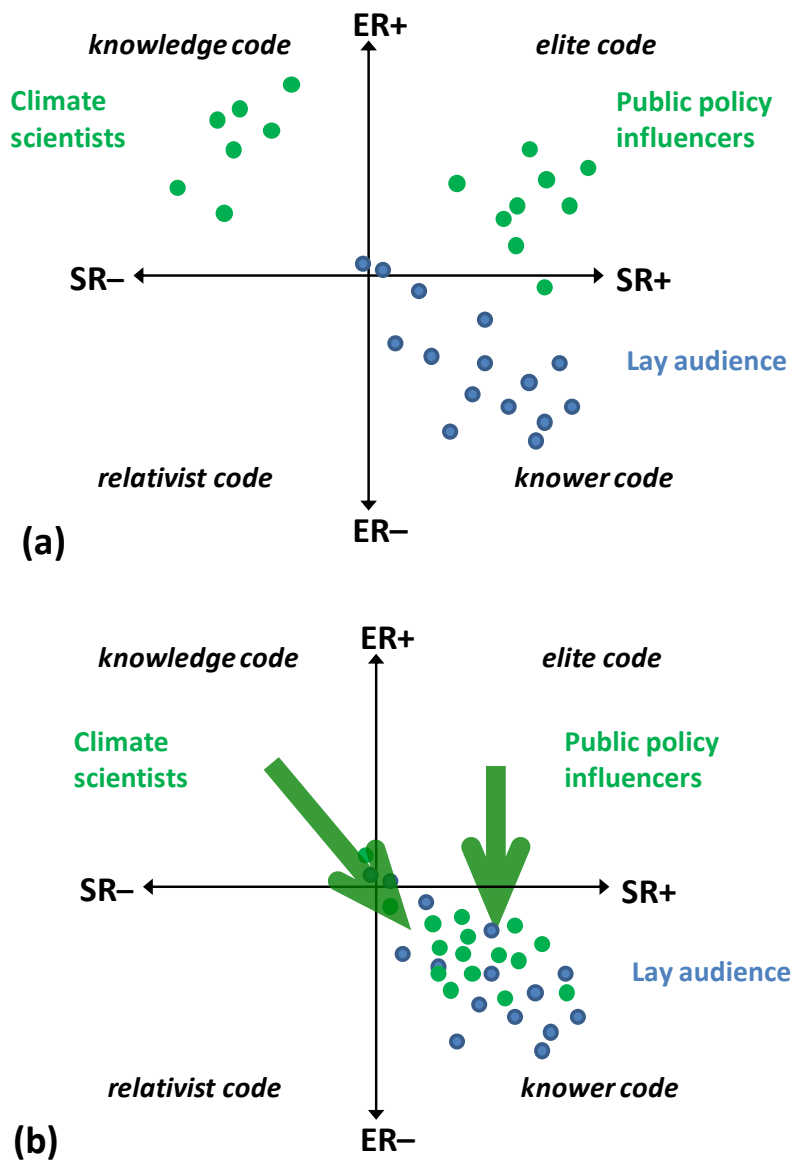
it in a similar light to the “clean environment” description and actions, part of what they did as good citizens.

Some strengths and limitations of the climate and non-climate variants of translation are considered in 7.4.4. We now turn to translation strategies for lay and PPI audiences and investigate their organizing principles.

### ***Translation strategies for lay audiences***

In LCT terms, translation requires that the legitimation codes underpinning CCC&E match those of the audience. The two scenarios by which this can occur for lay audiences are described here and illustrated in Figures 7.2 and 7.3.

Firstly, a messenger whose constructions of climate change are typically underpinned by different legitimation codes moves across the Cartesian plane to meet the audience’s codes: that is, the messenger shifts codes but the audience does not. To illustrate this in relation to specialization codes, Figure 7.2 part (a) shows a typical current situation in which climate scientists and public policy influencers whose climate change messages are underpinned by a knowledge code and an elite code respectively, fail to reach lay people whose knowledge practices are underpinned by a knower code. Part (b) shows the change that is required for translation to occur: communicators must shift the codes of their messages to match the audience’s knower code. An outcome of this translative move should be that climate change and climate action change from being alien and resisted because they do not match the audience’s legitimation codes, to being accepted when they match the audience’s codes – in the same way that climate change and climate actions were accepted by the Rotary participants when they matched a knower code and prosaic code.



**Figure 7.2: Translation for lay audiences, where the messenger and audience have different specialization codes<sup>34</sup>**

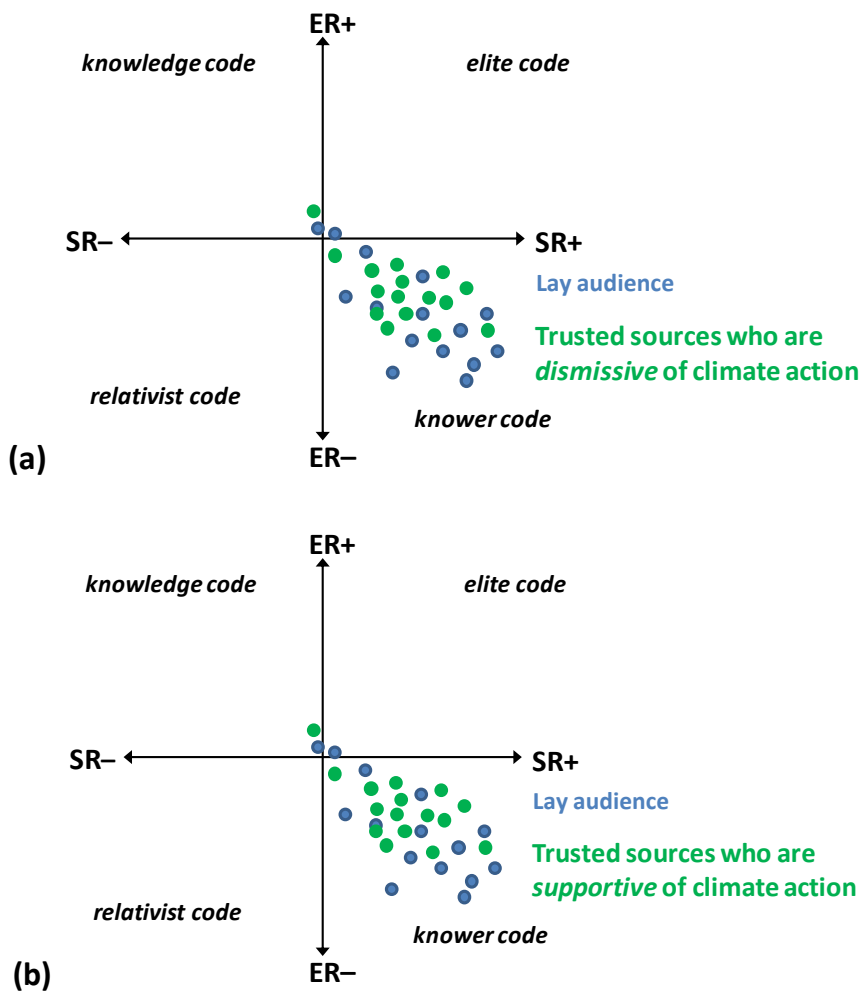
Key: green dots represent the messenger, blue dots the audience.

A second scenario involves messengers who share the lay audience’s cosmology or at least typically communicate climate change in this way and so do not need to shift codes to translate

<sup>34</sup> The Specialization movements are shown for illustrative purposes; similarly climate scientists and public policy influencers who share a rhizomatic code would need to move across the Semantic plane in order to translate climate change messages into a prosaic code.

climate change messages. This scenario works on the principle that there is more than one way that people “already see the world” in connection to climate change, which for simplicity could be labeled “dismissive” and “supportive”, and that these alternatives can be activated through communications. As we saw in the Rotary conversations, within the range of messages that are underpinned by a knower code and a prosaic code, messengers can choose helpful frames and discourses (e.g. responsibility to take action as a good citizen, “do your bit”) or unhelpful ones (e.g. Australia is a negligible contributor to global emissions) to evoke climate change actions as belonging in the ‘good’ or the ‘bad’ constellation, respectively. The shift occurs in the change of messenger from one who is dismissive of climate action to one who is supportive of it, with a corresponding change in message from climate change action being ‘bad’ to it being ‘good’.

Part (a) of Figure 7.3 shows trusted sources who are dismissive of climate action, evoking climate change in the ‘bad’ constellation. For the Rotary participants, these sources included talk-back radio host Alan Jones and (then) Federal Leader of the Opposition Tony Abbott. In Part (b), an alternative trusted source encourages the audience to take action on climate change by evoking an existing conception of climate change in the ‘good’ constellation or creating a new one. Some Rotarians performed this function for their peers (see section 4.5.2 on finding agreement). Other messengers who might play this role include church leaders, based on the concept of stewardship, and conservative politicians. In Australia it was only a few years ago that a Liberal Federal Leader of the Opposition (Malcolm Turnbull) was a vocal supporter of climate action. While the scene has since changed at the Federal level, there might be trusted local councillors and State politicians who are supportive of climate action.



**Figure 7.3: Translation for lay audiences, where the messenger and audience share the same specialization codes.**

A third scenario is also possible, which is a combination of the above two. A climate scientist or public policy influencer translates their messages and collaborates with a trusted source to deliver the message.

***Translation strategies for public policy influencers***

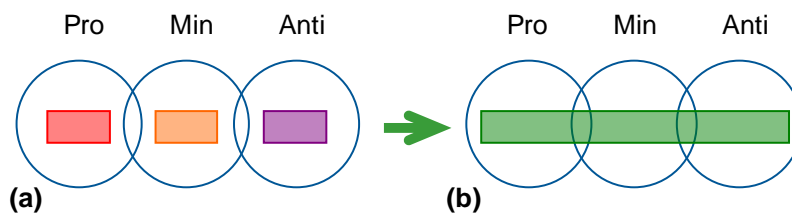
The concept of translation in this section applies to public policy influencers such as think tankers, NGOs and government advisers who are involved in the discourse and policy-making on climate change solutions. Based on the think tank findings in Chapters 5 and 6 and firsthand professional experience working in and with other public policy influencers, this section takes as a given that the way they propose solutions is typically influenced by their political ideologies or other expressions of stronger social relations. As an example, they might follow a particular

school of thought that does not necessarily have a strong evidence base but is concerned with ways of acting as a practitioner, being inculcated into ways of practicing a profession as a behavior change agent or a Community Based Social Marketer. In other words, developing solutions to climate change is typically underpinned by an elite code or a knower code. Further, due to their expressions of stronger social relations, these legitimation codes are likely to be associated with axiologically charged constellations that preference in some way certain solutions over others.

This section focuses on public policy influencers communicating with each other about climate solutions. It assumes that in the main, the agents driving the processes of translation and transformation are the “doers” who are trying to get the “resisters” on board. In line with the present study’s interest in climate change meanings, the focus here is on translation approaches that involve communicating climate change rather than those that work with non-climate motivations.

As previously described, translation involves framing messages to match the audience’s existing attributes – their cosmologies. For public policy influencers, translation involves communicating climate change in a way that is underpinned by a rhizomatic code (abstract and complex), which they share, as well as being compatible with individuals’ political ideologies, which they do not all share. The act of translation lies in selecting from the dense collection of climate change concepts and choosing to communicate those things that ‘speak’ to the audience by virtue of fitting within their constellation, rather than the things that are incompatible or antithetical to that person’s ideology. In this context, translation becomes as much about what is said as what is not said. For example, a think tank participant communicated his “frustrations” with carbon pricing in reintroducing “industrial policy into the heart of the economy around picking w- ah, with, around to a certain extent helping individual industries and how they operate” (Tim, see also section 6.3.2). Here, he stopped himself short of saying “picking winners” and replaced it with a lengthier but more ideologically catholic phrase. In clashing with some others’ political ideologies, “picking winners” would have constituted an act of ‘not translating’, as would communicating the abstractions of the climate science to a lay audience.

An activity that utilizes translation in service of the goal to adequately address climate change involves public policy influencers negotiating their existing political ideologies or other expressions of stronger social relations, to find mutually acceptable climate change solutions. As we saw in Chapter 6 and as shown in part (b) of Figure 7.4 below, for a solution to be accepted by two or more parties it must fit across two or more constellations, constituting an area of common ground. In this figure the three circles represent the think tank participants' three constellations as an example already familiar to the reader. Part (a) depicts three think tankers advocating for three separate and mutually incompatible climate policies each residing in a separate constellation. This is the act of 'not translating' to the audience's (the others') political ideologies. The shift to (b) occurs when the think tankers find a policy that fits in two or more constellations – in this case, in all three. Here translation is about moving from a 'stuck' position of parties advocating for solutions that others oppose on the basis of relatively strong social relations (ideological or otherwise), to a position of agreeing on mutually acceptable climate change solutions, as a critical first step towards enacting those solutions. What makes this a translation strategy is that it allows the public policy influencers to retain their strong ideological emphasis or other form of relatively strong social relations; these audience attributes remain unchanged.



**Figure 7.4: Translation as practiced by the think tank participants, in which they found solutions that were able to fit in multiple constellations, (b).**

*Key: Circles represent the pro-intervention, minimal intervention and anti-intervention constellations.*

### 7.4.3 Transformation

The advantage of the translation strategy described in the previous section is that messages reach people “where they are” in terms of their existing views and the legitimation codes that underpin those views. However translation may not facilitate actions that go “far enough, fast enough”, in the words of a think tanker. Currently there is a yawning gap between the emissions reductions being achieved through existing responses and the reductions required

to adequately address climate change<sup>35</sup>. Crucially, the types of systemic and structural changes that could deliver much larger emission reductions are qualitatively different from ‘simple and painless’ individual actions such as turning off lights and recycling. Understanding and acting on structural and systemic changes is likely to require knowledge practices that are underpinned by a knowledge or elite code and a rhizomatic code.

In the CCC&E context, transformation represents a change in a person’s characteristics to those that are more conducive to accepting the implications of climate change and taking appropriate action in response. Transformation was originally conceptualized by Brown and Riedy (2006) as “trigger[ing] personal development... along one or more developmental lines” towards being more inclusive of other worldviews, referring to the “developmental lines” of Ken Wilber’s (2001) Integral Theory. The findings of the present study suggest that it is also fruitful to conceptualize transformation in terms of legitimation codes, comprising code drifts across the planes and code shifts from one code to another (e.g. from a prosaic code to a rhizomatic code). In taking this position I recognize that code drifts and shifts are one aspect of transformative change alongside psychological and other developments in Brown and Riedy’s broader meaning of transformation.

In LCT terms, transformation represents an audience’s shifts or drifts towards codes that are more conducive to accepting and acting on climate change. There are a few key differences in how this plays out in lay and PPI audiences. For lay audiences who share a knower code and prosaic code, transformation involves gradually and iteratively ‘bouncing’ them up towards a knowledge code and a rhizomatic code to allow them to grasp the complex, connected and global nature of the issue and to recognize the gap between what ‘simple and painless’ actions can deliver and what is required to adequately address climate change. For PPI audiences that already share a rhizomatic code, transformation involves developing and evaluating solutions on the basis of their ability to address climate change rather than on their ideological compatibility. This would require shifting to an elite code and allowing evidence to trump ideology if the two are in conflict. These processes are further explored below for each type of audience.

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<sup>35</sup> “Adequately” means limiting the global temperature increase to 2 degrees Celsius as described in section 7.3.

### ***Transformation strategies for lay audiences***

Lay audiences whose knowledge practices are underpinned by a knower code and a prosaic code are likely to be ill-equipped to grasp the scale and complexity of the climate change challenge. If climate is reduced to weather, as in many of the Rotary conversations, then it is completely understandable that they dismissed two degree hotter days as relatively insignificant and undeserving of action, especially when compared with other social and environmental issues. Comprehending the full scale and significance of climate change and the urgency of taking action against it requires movement towards a knowledge code and a rhizomatic code. This would also be required to recognize the gap between what 'simple and painless' actions can deliver and what is required to adequately address climate change. While actions like turning off lights and recycling are admirable and do contribute to reducing emissions, they are nowhere near enough. If all of us 'do a little bit' rather than effect big, deep change, then overall we achieve a little bit rather than big, deep change. Therefore transformative communications and engagements aim to catalyze the audience's shifts towards appreciating some of the complexity, scale, significance and urgency of climate change and the types of actions that are required.

The question of how to facilitate transformation in practice is undertheorized. The existing literature tends to draw on developmental psychology and focuses on the personal development that is required in transformation (e.g. Riedy 2010; O'Brien & Sygna, 2013). One clear conclusion from the literature is that transformation is more confronting and challenging for people than translation. For example, Riedy (2010) states that transformation is "slow, inconsistent, unpredictable and personally challenging". Transformation therefore requires enabling people to grasp the scale and breadth of the issue and what is required to address it, in ways that they are likely to accept rather than reject. This means in ways that are empowering rather than overwhelming, for example by emphasizing human agency in the message and by gently and gradually 'bouncing' the audience towards a knowledge code and a rhizomatic (the medium). The CCC&E literature points towards the potential for working with trusted messengers, either peers within the group or external trusted sources, who can shift the audience 'up' the specialization and semantic planes. In the Rotary event, two participants in particular sometimes went towards a knowledge code and a rhizomatic code. This suggests that they have the specialization range and semantic range to be able to connect with their



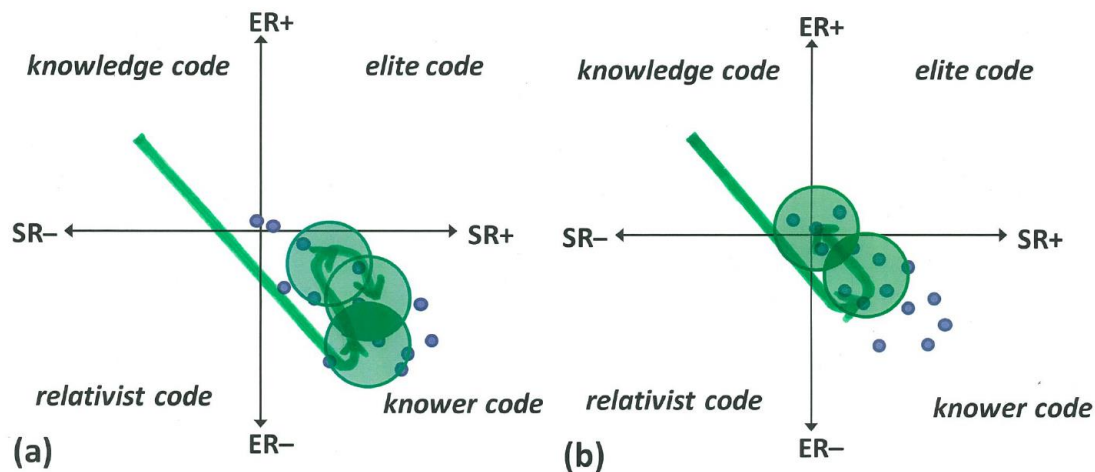
peers (code match) as well as shift them 'up' the range a little, towards a knowledge code and a rhizomatic code.

Figure 7.5 shows the steps that are involved in communicating a message that is underpinned by different legitimation codes to those of a lay audience, for example a knowledge code message about climate science. In this case, the first step involves translating the message into the audience's codes, here a knower code. From there, the message 'bounces' up a short way to stronger epistemic relations (ER) and weaker social relations (SR), and back down to a 'higher' resting place.<sup>36</sup> This means that when someone next engages that audience with climate change, shown in (b), the legitimation codes of at least some members of that audience in the context of climate change will have shifted. Compared with the starting point in (a), they will be more receptive to C&E that begins from a point of stronger ER and weaker SR. This is the key difference between translation and transformation: in Figures 7.2 and 7.3 depicting translation, the dots representing each audience member's legitimation codes stay in the same positions in the specialization plane, whereas transformation (Figure 7.5) entails movements of these dots across the plane.

It is worth emphasizing that transformation may not be as big an ask as first appears. It requires movements across the plane (code drift), rather than necessarily a complete code shift from one quadrant to another. It involves 'bouncing' people up gently and gradually, from their usual or typical codes underpinning their constructions of a particular topic (e.g. at a particular point in the knower code quadrant), to a place closer to a knowledge code. Just enough movement is required for people to be able to grasp the complex, connected and global nature of the issue and the actions required. This might involve moving to a place on the planes that they occupied in a different context, for example when learning science and mathematics at school, or it might be a new place.

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<sup>36</sup> This creates what Maton (2014) terms a 'wave'. The example here represents a specialization wave; corresponding semantic waves would also be involved in transformation.



**Figure 7.5: Transformation for lay audiences, showing specialization code movements in stages by the messenger (green) and audience (blue).**

A similar process could be pursued to create movement in semantic codes towards a rhizomatic code. Over time, the outcome of transformation for lay people would be an expanded *code range*: they would still be able to conform to the group's knower code and prosaic code, but would also be able to go to (or towards) a knowledge code and a rhizomatic code when confronted with challenges like climate change.

### ***Transformation strategies for public policy influencers***

Based on the literature and the think tank roundtable, a major driver for some public policy influencers' resistance to climate action is that it is perceived to be incompatible with their political ideology. There are a few possible ways to approach this situation:

- the one that is dominant in Australia at present could be described as 'not translating', involving a battle between public policy influencers' often mutually exclusive ideologies, which is thus unlikely to result in finding much common ground;
- a second strategy is translation as previously described; and
- a third is transformation.

Taking the think tankers as a microcosm of public policy influencers, a major shortcoming of the translation strategy is that it relies upon finding solutions that are compatible with participants' political-ideological positions. While it would appear to be fruitful to seek and implement jointly-supported solutions through climate change and non-climate translation strategies, there is no guarantee that the solutions derived from such processes will adequately

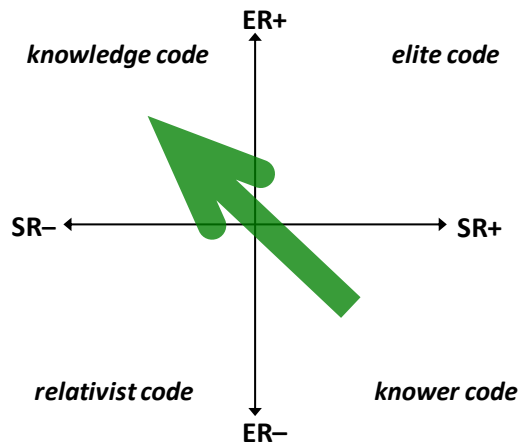
address climate change if they are made on the basis of ideological expediency and conduciveness to finding common ground rather than *also* taking into account the implications of climate science. Public policy influencers might only arrive at simple and painless solutions without initiating the types of systemic and structural changes that are capable of delivering much greater cuts in emissions.

It is because not all public policy influencers perceive climate change as an immediate threat and not all are equally committed to finding policy solutions to climate change that there is a need for transformation, however challenging it might be. Without fully taking into account the implications of the two degree temperature increase, a public policy influencers could be quite comfortable with a lack of immediate action on climate change. Recognizing climate change as an immediate threat requires knowledge practices that are underpinned by relatively strong epistemic relations (a knowledge code or elite code) and a rhizomatic code. This would require Specialization code shifts for those individuals not already operating from these codes. In this context, transformation concerns not so much how public policy influencers communicate and engage with other groups, but changes in their own *modus operandi*, in order to:

- take full account of the climate science in their policy prescriptions; and
- develop both ideologically- and evidence-based solutions, in which both epistemic relations and social relations are valorized and drawn upon.

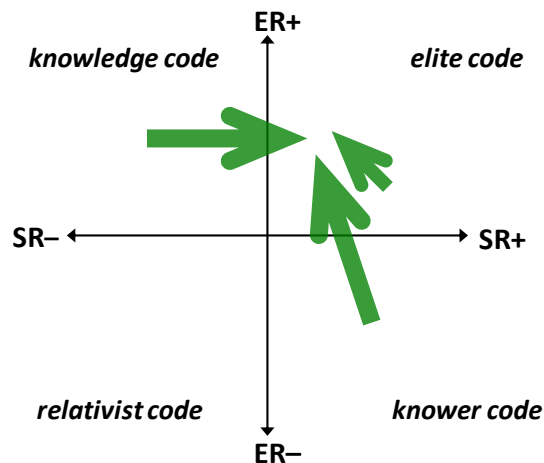
On the first type of shift, the roundtable think tankers construed the field of climate science as being underpinned by a knowledge code and a rhizomatic code, but for at least three of them (Tim, David, Sam), their basis for knowing about climate change was underpinned by a knower code. Depending on their political-ideological views, these three cited either mainstream scientists or dissenting scientists such as Plimer and Carter, which tends to suggest a cursory selection of high level conclusions that accorded with their political-ideological views. As mentioned in Chapter 5, these three think tankers acknowledged their own lack of knowledge about the climate science. In contrast the other two think tankers exhibited detailed knowledge of ‘safe’ levels of greenhouse gases and degrees warming, the rate of decarbonization that this implies compared with the current rate, and the expanding gap between the two and as such their knowledge of climate science was underpinned by a knowledge code. They also proposed offering “some serious climate science education”

(Miriam) for other think tanks. However, this effort to improve climate literacy by itself without transformation of the think tankers' knowledge practices would have little effect. In essence their basis of knowing about climate science would need to shift from a knower code to a knowledge code, as shown in Figure 7.6.



**Figure 7.6: Transformation for think tankers, involving a shift from a knower code to a knowledge code basis of knowing about climate science**

Secondly in developing solutions, think tankers and other public policy influencers would need to take climate science as the starting point and addressing climate change (rather than ideological compatibility) as the basis on which to evaluate solutions. This would involve shifting to an elite code and allowing evidence to trump ideology if the two are in conflict, rather than the other way around.



**Figure 7.7: Transformation for think tankers on climate solutions, involving shifts to an elite code basis for developing solutions, with a strong basis in climate science**

Transformation would involve the three types of code shifts indicated by green arrows in Figure 7.7. These correspond to the three types of problems and solutions identified by the think tankers and summarized in Table 5.1:

- A *knowledge code* was problematized by participants as failing to take on board psychological needs and desires and the political-ideological and other social forces at play in the climate change debate.
- *Knower code*: proposing solutions based on ideological compatibility rather than on also adequately addressing climate change means too little basis in the realities of climate change and therefore no guarantee that solutions will adequately address climate change.
- *Elite code*: whereas currently ideology tends to take precedence over evidence, the reverse would need to happen, that is, a stronger basis in climate science and other evidence (strengthening epistemic relations) and a weaker basis in ideology (weakening social relations).

The first two cases require a code shift to an elite code, the third a code drift within the elite code as shown by the green arrow. This is a form of elite code in which climate science is taken as the starting point for devising solutions, and its implications, such as the need for much more rapid decarbonization if we are to keep global temperature increases to two degrees, trump ideological preferences if the two are in conflict. The desired outcome is solutions that are both socially accepted and reduce emissions to adequately mitigate climate change.

#### **7.4.4 Comparing strategies**

Table 7.1 summarizes the key features of the translation and transformation strategies described in the previous two sections. It shows that each strategy can be adapted to quite different (lay and PPI) audiences. The underlying principles stay the same, regardless of the audience:

- Translation involves communicating concepts that match existing cosmologies. Using the table examples, these include aspects of climate change that are already understood and judged positively by lay audiences, and/or non-climate motivations for action. For public policy influencers, translation includes finding or communicating common ground solutions that match two or more political-ideological constellations.

- Transformation focuses on concepts that are more conceptually, emotionally or ideologically challenging for the audience, and it requires the audience to shift. These shifts would enable lay audiences to understand the scale and scope of climate change and take action accordingly, and public policy influencers to take climate science as the starting point and basis for solutions.

**Table 7.1: Summary of translation and transformation strategies for lay audiences and public policy influencers**

		Lay audiences	Public policy influencers
<b>Translation</b>	Strategy	Reach audience ‘where they are’, encourage actions that align with their cosmologies	Work with existing political ideologies
	Message or focus	Aspects of climate change that are already understood and judged positively, or non-climate motivations	Common ground: solutions that match two or more political-ideological constellations
	Codes	Code match	
<b>Trans-formation</b>	Strategy	Shift audience to understand scale and scope of climate change and take action accordingly	Shift audience to take climate science as the starting point and basis for solutions
	Message or focus	Aspects of climate change that are not yet understood or are more personally challenging	Solutions that adequately address climate change, regardless of political-ideological preferences
	Codes	Code drift towards a knowledge code and a rhizomatic code	Code shift from a knower code to a knowledge code or elite code, or code drift within elite code to stronger epistemic relations (climate science trumps ideology)

Each strategy has strengths and limitations in terms of contributing towards achieving the goals of CCC&E. The advantage of the translation strategy is that reaches people 'where they are' and so is likely to create more resonance and less resistance, but it may not facilitate actions that go far enough, fast enough. As some of the think tankers identified, a non-climate translation strategy focused on switching to clean energy would be a good start but many other types of actions are also required.

While both the climate and non-climate translation strategies attempt to 'meet people where they are', it is worth differentiating the approaches. Climate translation engages with the 'baggage' of climate change, whereas the non-climate variant avoids it. The goal of climate translation is that the audience understands and is supportive of climate action. The non-climate translation goal is for the audience to understand and be supportive of something else that contributes to addressing climate change. However if the audience is hostile to the concepts of climate change and climate action, then leaving those feelings unchanged is likely to mean that the hostility will arise again in relation to other climate change asks. Climate translation aims to deal with these reservations and preconceived ideas, for example that climate scientists are devious, by reframing them (although the codes stay the same). If the barriers and 'baggage' can be dealt with, then favorable reactions to other climate change asks can probably be expected. In contrast, this seems unlikely through pursuing a non-climate translation strategy because the barriers and 'baggage' remain untouched and unchanged.

Both variants of translation by themselves have limited scope to facilitate people taking adequate action, but climate translation can be the first step of transformation because it actually deals with and interacts with the issue of climate change. So amongst those who would otherwise discourage their peers from taking action on climate change, translation would aim to lessen their resistance, to shift them from being oppositional to at least neutral.

In summary, the non-climate variant of translation is likely to be the easiest CCC&E strategy in terms of being the least contested and least personally challenging, with the biggest potential for quick wins but the least potential for facilitating adequate responses to climate change. Without the urgency of climate change as an imminent threat, some actions appear to be optional extras or luxuries, 'nice to do' rather than 'must do'. Scholars have pointed to the limitations of 'brightsiding', that is, avoiding talking about the challenges of climate change

such as the need for rapid and widespread emissions reductions, and of promoting ‘simple and painless’ actions that do not address the systemic and structural causes of climate change. While transformation is the most personally challenging strategy for audiences, it has the greatest potential to deliver the big changes that are required. Climate translation sits somewhere between non-climate translation and transformation in its level of challenge and potential outcomes. Because the limited amount of literature on transformation suggests that it is a slow, challenging and unpredictable process, a pragmatic approach is to aim for and work on transformation while simultaneously pursuing translation (Riedy, 2010).

## **7.5 CONCLUSION**

This chapter demonstrates the application of LCT concepts to provide a systematic way of segmenting and tailoring CCC&E to target audiences. It built on the findings of the previous three chapters on the Rotary and think tankers’ constructions of climate change, by exploring the implications of those findings for CCC&E practice. It also takes up the reins from studies such as Capstick and Pidgeon’s (2014) that call for engagement with people’s doubts about the efficacy of climate responses, as an example, by articulating the form or structure (legitimation codes) by which to effectively communicate such concepts to audiences that share these codes.

It began by summarizing the previous chapters’ findings on the Rotary and think tankers’ cosmologies and their similarities and differences. For both groups, reaching agreement that climate change was a problem worth addressing, and finding common ground on solutions, were associated with a code match and a constellation match amongst the participants involved. If there was a code clash or a constellation clash, then they failed to find areas of common ground or those previously found disintegrated.

The analysis then moved to the implications of these findings for communicating and engaging with lay people and with public policy influencers. The first step was to identify an assumed goal of CCC&E and a need to address two major types of barriers to achieving this goal, namely resistance to the idea of climate change itself or climate responses, and a lack of means or motivation to take action. There is therefore a need for CCC&E, amongst other measures, to lessen the resistance and to facilitate and inspire action. The chapter then identified the principles of the two main strategies for CCC&E, namely translation and transformation, as well



as those implied by LCT. The two strategies were explored and reconceptualized in LCT terms, so that translation entails a code match and transformation a code drift or code shift.

Having established a framework for CCC&E, the focus turned to investigating the specific codes that would be required in translation and transformation strategies for lay and PPI audiences. For lay audiences who share a knower code and prosaic code, translation means matching these codes, for example in the form of messages about local, tangible impacts that are delivered by trusted sources. Transformation for lay audiences involves gradually facilitating code drifts towards a knowledge code and a rhizomatic code, to allow them to grasp the complex, connected and global nature of the issue and to recognize the gap between what 'simple and painless' actions can deliver and what is required to adequately address climate change.

For public policy influencers, translation involves negotiating their constellations that reflect political ideologies, to find acceptable climate change solutions. Transformation requires two kinds of code movements: firstly a code shift from a knower code to a knowledge code basis of knowing about climate science. Secondly in developing solutions, public policy influencers would need to take climate science as the starting point and to accept addressing climate change (rather than ideological compatibility) as the basis on which to evaluate solutions. This would require a code shift to an elite code, or code drift within elite code towards stronger epistemic relations, so that climate science trumps ideology rather than the other way around.

The analyses in this chapter raise the question: what concrete recommendations for CCC&E can be made on the basis of the code matches, drifts and shifts identified in this chapter? This question is explored in chapter 8, which provides illustrative examples of translative and transformative CCC&E for lay audiences and public policy influencers.

## **CHAPTER 8: RECOMMENDATIONS FOR COMMUNICATIONS AND ENGAGEMENT**

### **8.1 INTRODUCTION**

Chapter 7 set out a framework for systematically segmenting and tailoring CCC&E to target audiences, in LCT terms. It identified the specific legitimization codes that would need to be matched for lay and PPI audiences in translation, and the code drifts or shifts that each audience would need to make in transformation. This chapter applies these findings to make concrete recommendations for communicating to and engaging each group. The recommendations are based on the CCC&E literature and existing examples, participants' suggestions made during the events and interviews, and my own creative endeavors, informed by LCT. A more effective process would be to co-develop CCC&E with the audience in the types of modified focus groups held in the present study, or at least to tentatively develop messages as done in this section and then test those with the audience. This is the first time that CCC&E and LCT concepts have been brought together, so at this stage the recommendations are a work in progress that would benefit from further research.

While acknowledging the potential for non-climate translation (e.g. messages about renewable energy that do not mention climate change) to appeal to some audiences, the focus of the present study is on understanding audiences' views about climate change itself and finding ways to engage with them effectively so as to facilitate the responses required to adequately deal with the problem. Hence in this chapter the recommendations focus on the climate change variant of translation, as it engages directly with the issue. It can also form the first step towards transformation and thus offers the potential to lead to more substantial action on climate change.

The chapter begins with suggestions for translative and transformative CCC&E for lay audiences (8.2) and public policy influencers (8.3). Based on the Rotary and think tank events, some methodological implications for engagement events are outlined in 8.4. Section 8.5 suggests some ways of facilitating systemic and structural change that would encourage more people to take more substantial action on climate change.

## 8.2 CCC&E FOR LAY AUDIENCES

This section makes recommendations for translation and transformation strategies for lay audiences who share a knower code and a prosaic code. The chapter 7 analyses point to some general principles for audiences whose climate change views are underpinned by these legitimation codes. When pursuing a translation strategy, CCC&E should translate from a knowledge code (or elite code) to a knower code: for example from science-based, technical content written in the third person, to content narrated in the first or second person, based on lived experience and that is personally relevant to the narrator and audience. It also means translating from a rhizomatic code to a prosaic code, for example, from abstract to concrete, global to local, complex to simple concepts. Adopting a transformation strategy means starting from the audience's codes and iteratively 'bouncing' them towards a knowledge code and a rhizomatic code (abstract and complex).

If communicators have cause to talk about the climate science, then the examples and analogies used should be as local, tangible, personally relevant and familiar to the audience as possible. It would also help to start with the positive, to turn the focus from the problem of climate change to the solutions, and to emphasize the audience's agency to contribute towards solving the problem. Communicators would also need to take into account the axiological richness of climate change views that are underpinned by a knower code (see section 7.2). Use of an axiologically loaded term in the message will trigger one or the other constellation of 'us and them', 'good and bad'. This also underscores the importance of the messenger: a knower code audience is more likely to accept a message delivered by a trusted source in the 'us' group than in the 'them' group.

Translation in practice was observed in the Rotary event, in that participants tended to translate concepts that were underpinned by a knowledge code and rhizomatic code into their own knower code and prosaic code interpretations. Examples include translations:

- from climate as an abstract, system-level concept to weather that they knew through lived experience as something local, tangible and personal;
- from the scientific discourse of a two degree global temperature increase (an almost inconceivably large, build-up of heat at the equivalent of four Hiroshima bombs' worth of energy per second (Holmes, 2013)), to what a two degree increase feels like for an individual (fairly insignificant, the 'so what' response);

- from carbon pricing as a systemic policy mechanism to introduce incentives to reduce pollution, to a convenient mechanism for one group (the government) to extract money from others.

These particular translations do not lend themselves to people accepting climate change or responses to it (although the first two provide a basis for communicating the impacts of climate change in local, tangible and personal terms). The task is therefore to develop messaging that does encourage audiences to accept climate change, to take action themselves, and to support policy responses for systemic change, such as carbon pricing. The following sections provide examples of translation and transformation messaging towards each of these outcomes. It is worth pointing out that although the messaging (the content matter) in these examples applies to the Australian culture and context, the principles remain the same for CCC&E elsewhere. Some content is geared towards conservative audiences since opinion polling and empirical research suggest that they are more likely to reject climate change, or to accept it but reject policy responses that involve largescale, systemic changes (e.g. Lakoff, 2010; Leviston et al., 2011).

### **8.2.1 Accepting climate change**

The literature suggests that climate literacy by itself is unlikely to change people's views about climate change or facilitate their taking action (see 2.3.1). Nonetheless, as Moser (2010) suggests, public support for more substantial action seems unlikely unless the urgency and significance of the problem is widely understood. If not for climate change, many actions would be a luxury ('nice to do', an optional extra) rather than necessity ('must do'). The literature already includes recommendations to make climate impacts local, tangible and personally relevant. However, the meme that human-induced climate change is a hoax means that these climate impacts can be dismissed: they are either not going to happen, or they are natural phenomena that humans are powerless to prevent. Both of these narratives featured in the Rotary conversations, and surveys suggest that they are also reflected more broadly in the Australian population. For example, in a recent Australian survey, 83% of respondents agreed that climate change is happening, while only 50% agreed that humans are the main force driving climate change (Leviston et al., 2011). Notwithstanding the limitations of quantitative surveys, it appears that there is some work to be done in the zone between those who say that

climate change is natural and those who say it is human-induced.<sup>37</sup> Following are suggestions for a translation and a transformation communication strategy that encourage lay audiences to accept human-induced climate change.

### ***Trust climate scientists (translation)***

The media review conducted prior to the Rotary event revealed that in Australia, climate science is often communicated to the public in terms of greenhouse gas emissions, projected temperature increases and emission reduction targets. These are complex and abstract concepts that are underpinned by a knowledge code and a rhizomatic code, that is, they are likely to represent code clashes with the knowledge practices of lay audiences. In a translation strategy, the aim would be to communicate the climate science in ways that are underpinned by a knower code and a prosaic code – a code match.

This strategy would involve a shift from communicating what the science says to what *scientists* say, to accord with the audience's knower code.

A statistic frequently quoted in both academic papers (e.g. Maibach, Myers, & Leiserowitz, 2014) and popular media (e.g. Nuccitelli, 2013) is that 97% of climate scientists agree that climate change is caused mainly by humans. This strategy assumes that people form their views or change their minds on a rational, evidential basis: a knowledge code. It does not address the narrative that climate scientists belong to an ideologically-motivated clique – a narrative that strips them of the integrity and trustworthiness of 'real scientists'. The media review showed this to be a theme of Sydney talk-back radio hosts Alan Jones and Ray Hadley. It was also expressed in the Rotary event. If this narrative continues unchecked, then the 97% figure is unlikely to mean much, or may even be counterproductive in reinforcing the perception of a self-referential clique.

A translation strategy would aim to change the audience's perceptions of climate scientists so that they become trusted sources. In essence, it means shifting climate scientists from the 'bad' to the 'good' constellation. Climate scientists would be portrayed first and foremost as 'people like me', as trustworthy and capable people. Visual media of climate scientists could show them to be likeable, community-minded people with characteristics that are likely to resonate with

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<sup>37</sup> A point made by UK climate change communicator George Marshall at the 'Communicating climate change' masterclass in Sydney, 24 February 2015.

a lay audience (e.g. as a volunteer lifesaver with two kids). They would also be portrayed as consummate professionals, as Alan Jones did in a introducing a dissenting climate scientist who featured in his radio program. Several strategies could be employed to link climate scientists with other ('real') scientists, in examples of them working together, and in emphasizing that scientists as a group are amongst the most trusted people in society. The strategy would also highlight climate scientists' self-sacrifice for the benefit of the community, to give us the best available information about the climate and trends. They have battled the elements to collect ice cores in Antarctica. They have spent endless hours pouring over the data and checking their predictions, which to date have nearly always come true.

This example differs from the rap "I'm a climate scientist", featuring Australian climate scientists, which did not portray any attributes of the scientists themselves that might encourage a skeptical audience to take heed of their message.<sup>38</sup> Instead, they rapped facts. Unless they are already trusted sources, the literature and the Rotary findings suggest that the facts are likely to be ignored or rejected. The opening line ("I'm a climate scientist") was suggestive of a knower code, but the remainder of the rap was underpinned by a knowledge code.

### ***The bathtub analogy (transformation)***

While the 'trust climate scientists' message principally addresses the specialization code clash with lay audiences who share a knower code, the bathtub analogy deals with the semantic code clash between climate science (rhizomatic code) and lay audiences (prosaic code). However it also requires the audience to code drift towards a knowledge code and a rhizomatic code, so it represents a transformation strategy.

A common discourse amongst those who dismiss climate change is that human emissions of CO<sub>2</sub> are dwarfed by natural emissions. For example, former Australian Senator Nick Minchin (Liberal) said, "nature is responsible for 97 per cent of the earth's production of CO<sub>2</sub>; humans, just three per cent" (Minchin, 2011).<sup>39</sup> Some responses are rebuttals, for example on the myth-busting website [skepticalscience.com](http://skepticalscience.com), involving complicated explanations with facts and

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<sup>38</sup> Available at: <https://www.youtube.com/watch?v=LiYZxOICN10>

<sup>39</sup> The same Minchin who featured in the documentary *I can change your mind about climate change* (see section 2.4 on common ground).

figures that signal a knowledge code and a rhizomatic code. What is needed is a device to demonstrate how human emissions contribute to climate change, to make the concept accessible to lay people who share a knower code and a prosaic code via a simple analogy with simple imagery to stand in for the facts and figures.

One such analogy is that of water flowing into and out of a bathtub, as the late Professor Stephen Schneider explained to an Australian audience comprised solely of self-identified skeptics.<sup>40</sup> If there is a liter of water coming into a bathtub through the tap and a liter leaving through the sinkhole, then the system is in balance – as were greenhouse gas sources and sinks until the Industrial Revolution, which explains the stability of greenhouse gases in the atmosphere for tens of thousands of years until then. However, with just a little extra flow through the tap, the bath will overflow. Just a little extra (3%) greenhouse gas emissions from human sources will put the system out of balance and will mean that the planet warms up.

The bathtub analogy represents a shift away from knowing about climate change through trusted sources and lived experience, to a conceptual model, a ‘bounce’ towards a knowledge code and a rhizomatic code. However it is still closely related to personal experience and things that are tangible and visible, achieved by translating the climate system into a bathtub, emissions into water flow through the taps and so on. Thus only a small movement, a code drift, is required. It provides a good example of explaining a complex system in a clear and simple way without ‘dumbing down’ the science, that is, staying true to the underlying concepts.

In addition, the bathtub analogy could be extended to emphasize human agency in that the solution is to turn down the tap: we know what needs to be done and how to do it. Anthropogenic climate change is reversible if we turn off the extra flow through the tap. This extension to include the element of agency is important because of the likelihood that the audience would comprehend the existence of human-induced climate change, but find it too overwhelming. Effective communications would also focus on taking action, as described in the following examples.

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<sup>40</sup> “The Skeptics”, *Insight*, hosted by Jenny Brockie. SBS Television, 7 September 2010.

### **8.2.2 Taking action on climate change**

The following suggestions provide alternatives to messaging that is based on a “take action to save money” frame. As mentioned in section 7.4.1, appeals to save money may be counterproductive because they activate extrinsic values that are associated with a lack of concern and action on environmental and social causes. The Rotary conversations indicate that saving money is one of many motivations for taking actions such as installing rooftop solar power, including independence and “doing my bit”. The following three suggestions tap into a moral argument about “the right thing to do”; an emphasis on agency through “reaping what we sow”, and the need to “live within our means” on one planet.

#### ***“It’s the right thing to do” (translation)***

This messaging would aim to activate the strong moral motivations for action that the Rotarians spoke of, with everyone expected to “do the right thing”, “do your bit”, “do something about pollution”, do “the little steps that we all put in”, and so on. They also described the community-minded “values” and “mentality” that underpin strong community networks and “grassroots” activities as well as a respect for nature. Messaging could also refer to past norms and heritage that are being eroded, in the case of the Rotarians’ “what our ancestors did” as being a guide for right action. Climate change actions could be cast as expressions of social norms, based on the types of concrete, local, personal actions that the Rotarians held up as an ideal. For example:

Back in the day, we cared about each other  
we took actions for the good of the community  
we did little things for each other  
like walking our kids and grandkids to school  
like composting and growing and sharing vegetables ...

Such messaging would need to be tested with target audiences. A study that tested messages with climate ‘deniers’ in Australia (Bain et al., 2012) found that they were more supportive of climate mitigation actions when framed as leading towards a more caring and considerate society than when framed as dealing with climate change as a risk or threat, suggesting that these types of moral message hold promise.



***Agency: we shape the future (transformation)***

A theme of the Rotary event was that “the future is out of our control” and “it’s all in God’s hands”, and so there is no point taking action on climate change. An alternative frame would emphasize human agency to shape the future. “We reap what we sow” would be one way to convey the idea that humans are both the cause of and the solution to climate change. For example:

We reap what we sow. What we do to the planet, we do to ourselves.

When we overload the atmosphere, it heats up and creates more extreme weather.

When we overload the oceans, they become warmer and more acidic and sea creatures die.

But when we clean up our act, the atmosphere responds. The oceans respond.

It’s our choice, and our responsibility as stewards of the Earth.

It’s in our hands.

Like all transformation strategies, it includes elements of both translation (code matches) and transformation (code drift). Translation elements that are underpinned by a knower code and a prosaic code include the concepts of stewardship and “we reap what we sow” that are taken from the Bible but are also more generally understood. Transformation elements include the stronger evidential basis and explanatory power about cause and effect, with effect being the atmosphere and oceans warming up (towards a knowledge code). The atmosphere and oceans are global entities (towards a rhizomatic code).

Such messaging about human agency to shape the future could be combined with positive visions of the future in which climate change is being adequately addressed, showing tangible solutions already in place and thereby translating to a prosaic code. One example is *Sustainia’s Guide to Copenhagen 2025* (Sustainia, 2012). Communicators could present positive visions or participants in an engagement forum could develop their own. They could be very local and personal representations of a positive future, at the city or even suburb level (e.g. *Guide to Liverpool 2025* for West Liverpool Rotary participants). By virtue of being about the future and about possibilities rather than certainties, they represent a ‘bounce’ towards a rhizomatic code. They concern not what is and what the audience has experienced but what could be. However the local and personal anchoring could make the concept more accessible to audiences whose ways of knowing are underpinned by a knower code and a prosaic code.

### ***“Living within our means” on one planet (transformation)***

This messaging takes a commonly used analogy of the household budget for the national budget, which suggests that we should live within our means and not incur huge debts, and extends it to the planetary budget:

Right now, countries like Australia are living beyond our means. The stuff we buy and the waste we throw out is two planets’ worth, but we only have one. We’re living beyond our planet’s budget.

This is unfair – we need to play fair so that those who have the least are able to have a decent quality of life.

We *can* all live within our means, and live comfortably, but it takes everyone to be on board.

We’re all in this together.

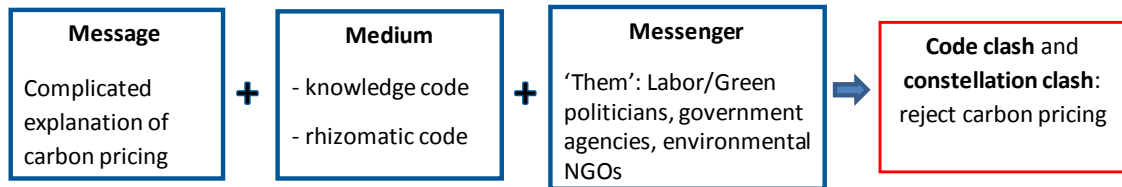
Translation elements include the household budgeting analogy, invocation of fairness, and countries as people (as in the Rotary conversations). Transformation elements include the extension to a planetary budget and extension of care beyond the family to others elsewhere, “those who have the least”. It seeks to weaken, or provide an alternative to, the ‘us and them’ constellations. Here, it is ‘us and us’, all in it together; such a constellational rearrangement might be possible by invoking the translative knower code and prosaic code elements mentioned above. It is also worth noting that an extension of care is already implicit in the overseas aid work to which Rotary and other groups contribute, which might provide the foundation for this message.

### **8.2.3 Supporting policy responses for systemic change**

The following are examples of messages that could encourage lay people to support policy responses for systemic and structural change. The focus here is on carbon pricing because it featured in the Rotary conversations as a particularly strong example of code clash and constellation clash. Carbon pricing presents particular challenges for CCC&E as a complex and abstract concept that also triggers political-ideological differences. This section describes the existing CCC&E followed by suggestions for potentially more effective translative and transformative messages. Given the growing number of international jurisdictions that have adopted some form of carbon pricing, the suggestions are made on the assumption that a carbon pricing proposal might be reintroduced in Australia in the future.

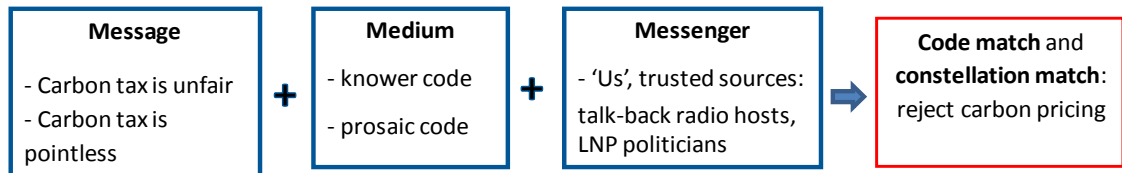
### Existing messaging

Based on the Rotary conversations, the messages they received from carbon pricing advocates could be characterized in the following way:



Principally from the Australian Government, they heard either complicated explanations of how carbon pricing would work, or virtually no explanation at all in the case of the “Clean Energy Future” messaging. As one of the Rotarians said, “the government has failed to explain [it] to everybody. Nobody knows what the carbon tax is about.” Here, carbon pricing is an abstract, impersonal and intangible measure. The messaging is thus underpinned by a knowledge code and rhizomatic code, which represents code clashes with the audience’s knower code and prosaic code. By invoking conservative audiences’ ‘them’ group such as Labor and Green politicians, it also represents a constellation clash.

In contrast, the messages they received from those dismissive of carbon pricing can be depicted as follows:



By describing carbon pricing as a “great big new tax”, Tony Abbott<sup>41</sup> invoked a negatively evaluated “tax” frame and a perceived differentiator between Liberal-National and Labor politicians. In popular media the tax was portrayed as being unfair by raising ordinary Australians’ “cost of living”. Questions were also raised as to why ‘clean’ Australia should implement carbon pricing ahead of ‘dirty’ countries such as China. A Rotary participant summed up another Liberal theme about the tax being pointless: “they’re getting all this money in, then they’re giving it back [through the compensation scheme], what’s the point?” Abbott also emphasized the amorphous nature of both the policy measure and its target, carbon dioxide, describing them respectively as “a so-called market in the non-delivery of an

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41 Leader of the Federal Liberal Party at the time of the Rotary event.

invisible substance to no one” (Cubby, 2013) and “an invisible, odourless, weightless, tasteless substance” (Kelly, 2013). These descriptions about fairness, ordinary Australians, and countries as people are underpinned by a knower code. They also translate carbon pricing, originally conceived as shifting system-wide incentives (rhizomatic code), into a tax and individual actions of taking and giving money (prosaic code). Given the code match of these messages and constellation match of the messengers, it comes as no surprise that the Rotary audience rejected carbon pricing.

We now turn attention to alternative messaging using the strategies of translation or transformation. The examples are based on an overarching theme of ‘get the polluters to do their bit’, expressed in different messages or narratives: in a translation strategy, ‘make the [cricket or school] rules fair’ and in a transformation strategy, using a supermarket analogy to convey the message ‘make the switch worthwhile’ for polluters.

***“Make the rules fair” (translation)***

A series of Australian government CCC&E initiatives, such as the 2007 Climate Clever campaign, have encouraged householders to take ‘simple and painless’ actions.<sup>42</sup> Such campaigns have arguably led to the sentiment expressed in the Rotary conversations that ‘if everyone does the right thing then climate change will be solved’. Thus, a useful starting point for a translation strategy would be to extend the “do your bit” theme to include “the big polluters”. For example: “We all know that you and I can only do so much by recycling and changing light bulbs. That means the big polluters need to step up and ‘do their bit’ too.”

A message to follow this point could be based on a cricket analogy of ‘leveling the playing field’, that is, ensuring fairness amongst all players. This narrative would demonstrate that the playing field is currently not level in that ordinary people are making efforts to reduce greenhouse emissions while the ‘big polluters’ such as coal-fired power stations are free to pollute. The message could include the Australianism “it’s just not cricket!”, referring to something that is not fair or not the done thing amongst decent people. While environment NGOs used the term “price on pollution” in the context of making big polluters pay, the concept lacked a broader

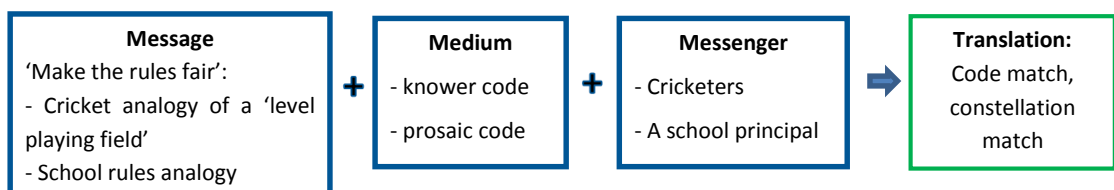
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<sup>42</sup> Climate Clever advertisements featured ordinary Australians changing lightbulbs and purchasing energy efficient appliances, saying “I can do that”.

schema of leveling the playing field through carbon pricing. More importantly, it omitted a narrative of *why* this was important to achieve, not so much from the point of view of reducing pollution (a knowledge code), as expressed by the government and NGOs, but on *fairness* (a knower code). Carbon pricing as ‘leveling the playing field’ becomes about groups of people, fairness and equity, so that everyone does their fair share (a knower code). As a culturally relevant and tangible example, the cricket analogy also speaks to a knower code and a prosaic code exemplified by Rotary participants.

An alternative message could use the analogy of school rules. As in the ‘level playing field’ message, it would show the need to ‘change the rules of the game’ that unfairly benefit the big polluters, to make those rules fair. The government would be like a school principal laying down the law (the school rules) and giving the message that “From now on, the big polluters (misbehaving school children) need to do the right thing; we have changed the rules to make sure they do and those rules will be enforced”. The concept of ‘school rules’ is universally understood, and could have particular resonance for conservative audiences as it invokes the school principal as a ‘strict father figure’ (Lakoff, 2004). As Lakoff points out, former US President George W. Bush also invoked school rules in going to war in Iraq despite widespread public opposition, saying “I don’t need a leave pass” to go to war.

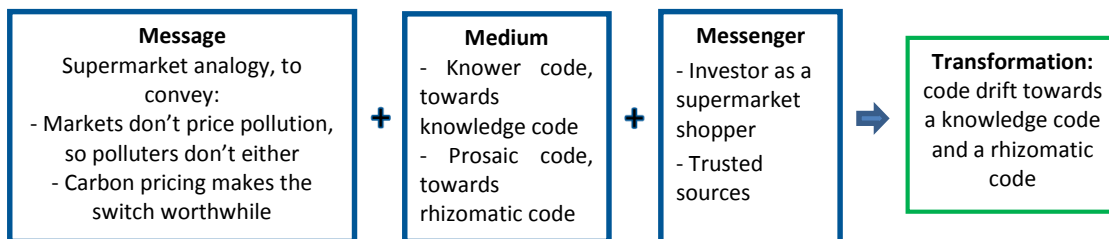
The cosmology of the level playing field and school rules analogies can be depicted as below. In short, the message, medium and messenger all represent a code match and constellation match for a knower code, prosaic code audience.



***“The switch makes sense” for polluters (transformation)***

The point of this message is that without a carbon price, it makes perfect financial sense for polluters to continue to pollute and investors to continue to fund coal fired power stations. In other words, markets don’t price pollution, so polluters don’t either. With a carbon price, these decisions change. Carbon pricing shifts the operations of power stations and investors, in that the switch to alternatives makes financial sense.

A simple, personally relevant analogy of buying products in a supermarket could be employed to convey this point in print or visual media. A pinstripe suited investor in a supermarket is deciding between grimy coal-fired power stations on one side of the aisle, with a \$100 million price tag, and sparkling, bright, clean solar power on the other, for \$150 million. “This is what happens without a carbon price”: he chooses coal. “And now, with a carbon price”: the coal option becomes \$200 million and he chooses solar. The elements of the message can be represented as follows:



The message makes use of several elements of translation. Firstly, it employs the symbolism, as the Rotarians did, of ‘dirty’ signifying ‘bad’ and ‘clean’ signifying ‘good’, which entails the kind of binary axiological constellations that can be generated by a knower code. Secondly, lay people should be able to recognize themselves in the analogy, making similar purchasing decisions on a daily basis. Whereas the Rotary participants said they did not understand “the point” of carbon pricing, here carbon pricing clearly works because big polluters and investors have an incentive to change. The transformation element relates to explaining carbon pricing in terms of investment decisions, but it is achieved via familiar and simple subject matter (i.e. supermarket purchases) that signifies a knower code and a prosaic code. In this way it is analogous to a Rotary participant’s illustration of cumulative impacts through the example of many people littering small cigarette butts that adds up to a big problem. In that example, the cumulative impact concept represents a shift towards a knowledge code and a rhizomatic code, but it is explained using personal, simple, tangible subject matter that is underpinned by a knower code and a prosaic code.

### 8.3 CCC&E FOR PUBLIC POLICY INFLUENCERS

The focus of this section mirrors that of the think tankers’ in the roundtable, on finding effective ways for public policy influencers to communicate amongst themselves. The section concludes with some brief comments on their communications with the media and lay people.

### 8.3.1 Translation for public policy influencers

Translation for public policy influencers involves working with their existing ideologies or other forms of stronger social relations. This resembles one of the think tankers' suggestions to invite free marketeers to come up with their own solutions so that they feel comfortable expressing their support for climate action "within some framework that is utterly free market" (Miriam). The content matter of CCC&E is important so far as it relates to constellations. By understanding the basis and content of the constellations, it should be possible to avoid inadvertently transgressing others' 'bad' constellations as in the example of carbon pricing, "future generations" and "collective legacy" which were all negatively appraised by one of the think tankers (Tim).

One way of accommodating divergent ideologies is for parties to jointly identify mutually acceptable climate change solutions (common ground). In the roundtable, the think tankers found several areas of potential common ground that with further work might fit within all three constellations, including proposals to remove fossil fuel subsidies and to "tax pollution not work". These are discussed below as useful starting points to pursue further.

**Markets and subsidies:** The roundtable conversations about ending fossil fuel subsidies seemed to be the start of a translative process, of finding concepts and language that resonate with people from different ideological perspectives. However in the few minutes devoted to it within a single roundtable, the think tankers scarcely touched on the details. Coming from a free market perspective, Tim did not support abolishing fossil fuel subsidies while allowing renewable subsidies because it represents a market distortion. A concept that could potentially be progressed in a translative strategy is that in an ideal world with a perfect market there would be no need for subsidies for either fossil fuels or renewables because the price of pollution would be already factored in. However, current and historical fossil fuel subsidies mean that the playing field is not level for alternative forms of energy including renewables, and so for a period of time, more intervention is required to redress the imbalance. The market is already a product of human choice and intervention and this is an opportunity to create a more perfect market. This is a translative message because it works with and negotiates existing ideological preferences. (In transformation, public policy influencers would downplay their ideological preferences to prioritize finding solutions that reduce emissions.)

***Carbon pricing and “tax pollution not work”***: In Australia carbon pricing was introduced with a package of associated measures including a trebling of the tax-free threshold. The package was unpalatable to free-marketeers and some conservatives who perceived it as a wealth redistribution measure through heavy-handed government intervention. Thus it achieved translation for progressives, but not for free-marketeers. An alternative measure that might resemble to translation for all parties might entail reducing everyone’s tax rate by 0.5%, which would involve some compromise by progressives and some by free-marketeers. Such a measure would deliver the same tax base for government but start to shift from taxing a ‘good’ (labor) to a ‘bad’ (pollution), which was supported by the self-identified conservative think tanker in the roundtable (Sam).

Outside the roundtable there have been several attempts to find common ground on climate change across different ideologies. Both in Australia and the US, carbon pricing itself is or was an area of common ground amongst some politicians from opposing parties. UK research into climate communications for center-right audiences found that conservatives were concerned about climate impacts in ways that related to the same intrinsic values shared by progressives, but conservatives expressed them in different ways, such as in their love of the British countryside (Corner, 2013). While these groups could seem to be “talking past each other” (Hoffman, 2011b), they actually shared the same base concept that was expressed differently. Thus, a potentially fruitful task would be to identify values-based areas of common ground and put them to use in translation strategies. Finally, Bain et al’s (2012) experiment to identify how best to engage Australian climate deniers in climate action found that the societal impacts of climate change responses was a concern shared by deniers and believers, and deniers were more supportive of responses when they were framed as contributing to a more caring and considerate society. Although this sounds obvious as an area of common ground across ideologies it is not a framing that was used in any of the media articles I scanned prior to the engagement events, nor in the events themselves.

One avenue that could be further pursued is to invite those who oppose government intervention for climate action on ideological grounds (e.g. many conservatives and free marketeers) to come together to explore whether they can find solutions that are compatible with their ideological position that will still reduce emissions as rapidly and substantially as the science implies we must. If not, then they would need to be willing to compromise in light of



potentially much more severe climate impacts and draconian response measures later – both of which would impinge on individual liberties and damage “longstanding and delicate social systems” (Sam) far more so than existing measures and proposals. This is compromise on a ‘lesser of two evils’ basis, supporting some actions that are outside one’s comfort zone in order to avoid worse later. It resembles the ideas raised in the roundtable about finding ways for those who would need to do the most changing to see the benefit in doing so, and showing conservatives that rapid action might be preferable to catastrophic climate change impacts. The resisters would need to be actively engaged in this conversation so that they come to their own conclusions about which responses they might be willing to support and why. For this to happen, they would need to accept the climate science and its implications for more urgent and substantial climate responses, which suggests the need for transformation.

### **8.3.2 Transformation for public policy influencers**

As described in section 7.4.4, transformation for public policy influencers comprises two related elements. The first requires a shift in their knowledge practices around the climate science from a knower code to a knowledge code. The second involves developing climate responses based on an elite code and weakening social relations if they are in conflict with epistemic relations.

As part of the first shift on the climate science, some of the think tankers acknowledged their own and other public policy influencers’ lack of basic climate literacy and in particular, knowledge about the public policy implications of climate science. To address this might require a form of climate science translation for public policy influencers, potentially using similar analogies as for lay audiences (section 7.5.1). Although often highly educated and knowledge code in some fields and contexts, some public policy influencers such as think tankers are required to be across many fields and may not necessarily be particularly scientifically literate. The need for science translation for public policy influencers would be important to recognize when carrying out the “serious climate science education” proposed by one of the think tankers. Importantly, as demonstrated in the bathtub analogy in section 7.5.1, this does not require ‘dumbing down’ the science but rather translating it in easily understandable ways while staying true to the concepts.

On the second type of transformation, a major shift in the way think tankers and other public policy influencers operate would occur if they were to agree to keep abreast of the details of

the climate science and factor in its implications for climate responses. Two of the think tank participants said that they should have taken on this responsibility as influential public figures, and were ashamed that they had not. Another major change would be to make their proposed solutions explicit and transparent so that they could be subjected to scrutiny – both in terms of their ability to address physical climate change (relating to epistemic relations) and their impacts in social, cultural and psychological ways (relating to social relations).

How to go about catalyzing and facilitating such changes is undertheorized. The question of how to get all parties to agree to change in these ways is one that would need to be asked of think tankers and others themselves. A necessary first step would be for the resisters to come to the table. This might be facilitated by:

- All parties recognizing climate change as a problem that needs addressing now. In the roundtable, “accepting the implications of the science” depended on one’s viewpoint: if humans are adaptable and the market will respond when needed, then climate change is not a big problem. What could change this in PPI circles is a greater awareness and acceptance of the public policy implications of the two degree limit. For example, climate system inertia means that action needs to be taken not when the signals reach the market, but many years beforehand. With such a recast of the climate change problem, there would be some hope of shifting public policy influencers’ goal from winning a political-ideological debate to getting everyone to the table to find solutions.
- Establishing forums for a diverse mix of public policy influencers to articulate their concerns and jointly work out whether and how they could be allayed. In this regard, the fact that the think tankers agreed to come together in dialogue for this research is promising.
- Finding ways to diffuse the ideological battle, including by depoliticizing climate change so that it is no longer a ‘left’ issue but bipartisan again as it was under Rudd and Turnbull (see page 131). This might be facilitated by finding common ground on solutions, things of mutual benefit that are capable of adequately addressing climate change, which in turn could lessen the motivation for resisters to fight climate responses and to generate discourses that spread doubt about climate change.
- Pressure from outside forces: If there were international moves afoot towards stronger emissions reductions, binding targets and the like, then resisters might have cause to

contribute towards finding solutions that were aligned with their political ideologies, or risk being excluded from such negotiations. Locally, a similar effect might occur if a pro-climate action government were to come to power in Australia.

- Pressure from within: building momentum amongst supporters of climate action within political party and think tank memberships, demonstrate that as insiders they would be better placed than outsiders to get their peers on board and agitate for climate action. Although this might seem remote in the current political climate in Australia, it is worth a reminder that Turnbull lost the Liberal leadership to Tony Abbott by just one vote in 2009, in a contest in which climate change featured prominently.
- A perception that the general public as a whole is seeking more substantial climate action.

Bringing all parties to the table to jointly pursue climate solutions is a hugely challenging task and it is not the place for this thesis to come up with the answers – only to make some suggestions and to point to the need for more research in these areas that ideally includes public policy influencers experimenting with different approaches. Nonetheless if we assume for argument's sake that at least some resisters have come to the table, then there would seem to be a number of fruitful initiatives to pursue to encourage transformation. For an individual championing transformation, these initiatives might include:

- Run training for public policy influencers that makes the code shifts explicit: give examples of policy or thought pieces that take the climate science as the starting point (underpinned by a knowledge code or elite code) and contrast with those that do not (underpinned by a knower code).
- Create a cross-ideological, cross- think tank campaign with a charter or pledge to be aware of the climate science implications, take them into account in policymaking and convey them in media commentary.
- Be a role model: make the code shifts explicit and visible, start to set new norms and shift the legitimation codes across the think tank profession. For example, when a roundtable think tanker conceded a point of evidence about governments picking winners that ran counter to his school of thought, he explicitly identified this shift (Sam).

- Foster culture change involving compromise and graciousness, i.e. demonstrate some of the personal elements of transformation identified by Brown and Riedy (2006) that lie beyond legitimation code shifts.
- Demonstrate to resisters a willingness to compromise by weakening ideological preferences. For example, one of the roundtable think tankers said she would be willing to put aside her government intervention preferences if that was what it took to adequately address climate change.
- Encourage resisters to come up with their own solutions to adequately address climate change, rather than climate advocates who do not share the same political-ideological foundation proposing quasi-regulatory mechanisms such as carbon pricing and failing to connect.

It is also worth acknowledging the broader, systemic changes that would assist in getting public policy influencers to the table and fostering transformation. These include changes in the media and political circles that the think tankers identified perpetrate oppositional rather than cooperative endeavors and the rejection of science and reason in favor of “entertainment”. The ultimate solution would see their transformation from a knower code to an elite code or a knowledge code. While working on this, public policy influencer could pursue translation actions: for example in media engagements this might involve shifting focus away from a ‘he-said-she-said’ binary argument about whether or not climate change is happening, towards climate solutions; away from ‘believers’ and ‘skeptics’ to ‘doers’ and ‘resisters’. Trusted sources could be employed or referenced to the extent that they are doers facilitating solutions.

Finally, in proposing CCC&E for lay audiences it was noticeable that the think tank participants covered only translation strategies to match the audience’s knower code and prosaic code. It would be helpful for think tankers and other public policy influencers to also consider and start trialing ways of facilitating transformation in these and other audiences.

#### **8.4 METHODOLOGICAL IMPLICATIONS FOR ENGAGEMENT**

This section brings together the Rotary and think tank findings and the engagement literature to make some suggestions for the design of future engagement events. Subject to further research, similar engagement events to those employed in the present study could be of benefit to the parties involved and contribute towards action on climate change:

1. For participants: engagements could be forums for translation and transformation, for participants to form their own understandings, agreements and common ground on climate change;
2. For engagers (facilitators) and commissioners of such engagements (e.g. government agencies): engagements could increase awareness of others' perspectives on the issue and enable identification of audiences' cosmologies to inform subsequent CCC&E.

The recommendations in this section aim to maximize the value of engagements for these parties. In summary, the previous sections of this chapter have demonstrated that the message, the medium and the messenger are all important elements of effective CCC&E. To these we can now add a fourth dimension: the *methods* of engagement also matter. The legitimation codes underpinning the methods need to match participants' codes (translation), and/or facilitate shifts in their codes (transformation).

#### **8.4.1 Maximizing value for participants**

Engagement events could start to make cosmologies more explicit and facilitate participants becoming more self-aware of their cosmologies, here meaning the basis of their positions on climate change. For example, one of the Rotarians noticed that the conversations about climate change “always [came] back to the carbon tax” (Jock) and he recognized his antipathy towards the tax as a Labor party initiative. Another said that the event made him realize that he was anti-carbon tax but supportive of other climate action, “it’s just that I didn’t, actually, *know* that I thought that, and the night actually brought that thinking out” (George). Particularly with a trusted source playing the role of facilitator, conversations such as these could start to make explicit the times when participants' climate change views are based on a knower code and a prosaic code, and the times when they ‘bounce’ towards a knowledge code and a rhizomatic code. This could form the first step of transformation, as participants become aware of their cosmologies, gain experience in making shifts, and through enacting such conversations, start to change cultural norms around talking about climate change, if only in their own circles.

Similarly, the think tank roundtable points to the potential for engagement events to contribute towards transformation outcomes. The closed door format of the roundtable provided a forum for the think tankers to practice transformation, that is, a shift towards

stronger epistemic relations and weaker social relations. For example, several think tankers said “I don’t know” about the climate science, a position they never adopted in the public forums studied prior to the roundtable. One of the think tankers remarked about “the gulf” between the constructive nature of the roundtable conversations and the “front page battle” in the media. Engagement formats similar to the roundtable might be more conducive to start the ‘bouncing’ involved in transformation, for example as some of the think tankers did, making explicit when they came to a conclusion that went against their ideologies (e.g. supporting government intervention that had facilitated advances in solar technology). In contrast, at least in the public forums and media appearances reviewed in this study, the think tankers’ tendency was to move in the opposite direction towards a knower code, battling out their ideological differences. The roundtable generated plans for post-event actions such as climate literacy for public policy influencer so that their ideological positions could be informed by, and potentially reframed to take account of, the climate science and the risks posed by climate change (shifting towards stronger epistemic relations). Participants also identified potential areas of common ground such as abolishing fossil fuel subsidies that could be further developed in other forums.

In terms of the timing of engagement events, there would seem to be windows of opportunity to maximize the translative or transformative impact on participants. For lay audiences, lived experience is central to knowing about climate change, and so timing engagements to coincide with or closely follow extreme weather events such as heatwaves, droughts and floods is more likely to “connect the dots for people” as a think tanker put it. For public policy influencers, the release of the IPCC Assessment Reports every few years might be a trigger for conversations that shift towards taking climate science as the starting point for solutions. As suggested by a think tanker, if public policy influencer could come to the table taking “the IPCC [report] as gospel” they could then each argue for solutions based on that starting point. To do so would require participants in such an engagement to be across the details and the policy implications of the IPCC findings, a first step towards bridging the gap between the science and policy.

There are a number of findings of the Rotary and think tank events that have implications for the sequencing of engagement processes. Engagements with lay people could fruitfully begin by matching their knower code and prosaic code, as the first step of translation and/or transformation strategies. For example, although I was unaware of LCT at the time, the values priming at the start of the Rotary event and ensuing conversations about contributing to the

club and the community as good citizens fortuitously aligned with participants' knower code. For lay audiences, it would also seem prudent not to start with the climate science due to its contentious nature. A more productive approach might be to start and focus the bulk of the conversation on human agency to deal with climate change (or other issues if employing a non-climate motivation strategy) and on specific local and tangible actions.

For both the Rotary and think tank groups, the shifts in the content being discussed throughout the course of the events seemed to be related to shifts in interactional dynamics between participants, with implications for event sequencing. In particular, most of the examples of participants coming to agree that climate change is a problem and finding common ground on solutions occurred an hour or more into the conversations, suggesting that participants needed time to 'warm up' to each other and to the engagement topic and format. In the think tank roundtable there was also a rapid 'cooling down' with the change of context at the end. In designing the roundtable, it seemed logical to place a common ground segment at the end because it would draw on all the previous conversations. However, in practice, it seemed that the think tankers were willing to weaken the ideological basis at times during the roundtable to see where it took them, but then they returned to a relatively strong ideological basis at the end when their return to the 'real world' was imminent. The change of tone amongst participants at the end seemed to work against finding common ground. Therefore in future engagements with public policy influencers it might be more fruitful to seek common ground mid-way through after scoping out the constellations.

Based on the way the think tank roundtable played out, it would be useful to make use of specialization and semantic waves in future engagements (see 7.4.3 on transformation principles). Waves refer to movements 'up' and 'down' a particular LCT dimension, for example from stronger semantic gravity and weaker semantic density, 'up' to a more abstract concept with weaker semantic gravity and stronger semantic density, and back 'down' to specific examples of the concept, and so on. In relation to semantic waves, first establishing high level agreement on mainstream climate science, as done in the roundtable, would seem to make for a solid start that is underpinned by a rhizomatic code, which all the think tankers shared. The science is underpinned by a knowledge code: it has strong explanatory power, particular claims can be verified as being right or wrong without needing to devise and agree on a separate mechanism to arbitrate between competing claims. Reaching such high level

agreement reinforces similarities rather than differences, areas of agreement rather than disagreement, that might provide a foundation for finding common ground on the more challenging details of the science and its implications that invoke participants' ideological differences.

When moving into territory that invokes the ideologies and is therefore underpinned by stronger social relations, it would again seem prudent to start with high level principles (rhizomatic code) and delay going into the details (prosaic code) that show up the ideological differences. Without being aware of the LCT codes, this is what I did by starting with the question "do you agree we need to live sustainably on the planet?", in anticipation that the details on what that means in practice and how we achieve it would trigger disagreements based on differing ideological preferences. From there, it would be useful to explore the contents and boundaries of each participant's constellations, and at a high level (rhizomatic code) identify climate responses that might fit within two or more constellations (potential common ground). Then the discussion could move to specifics such as extra conditions that would need to be met (eg Miriam's "but only if... a heftier target"). If the process resulted in a stalemate, that is without finding common ground or if previously found common ground disintegrated, then the facilitator could encourage participants to come back up the semantic wave and work on another angle (health, energy independence) related to the solution being considered.

In addition to semantic waves, engagement events could assist participants to ride specialization waves between a stronger and weaker ideological basis as a form of transformation. Some of the think tankers did this in the roundtable: when the conversation shifted to an ideological argument underpinned by a knower code, one of the participants (John) tended to reintroduce the climate science (knowledge code). The facilitator could be prepared with hypothetical scenarios to pose to participants that encourage a weakening of ideological basis (social relations) as suggested by a think tank interviewee: "say you were in government and you required each other's votes to get a bill up, what would you be willing to compromise on, and what wouldn't you?" (Miriam).

In addition to the timing and sequencing of engagements, their purpose and format also have important repercussions because they are underpinned by different legitimization codes. Thus



it is possible to match the codes that underpin the format of an engagement event with participants' codes. As an example, the purpose of the Rotary event was to capture participants' subjective views and emotional responses, or as I described it, "it's not a test, there are no right or wrong answers". The event format was an informal social occasion, with participants chatting while eating dinner and drinking, and exploring the topic at their own pace in their own way. In contrast, an engagement event underpinned by a knowledge code might aim to test participants' objective climate knowledge, with the facilitator able to assess participants' answers as being correct or incorrect according to the climate science. A format capable of generating this content might include specific climate-related questions asked by the facilitator and answered by participants (for example, in a trivia contest).

Finally, based on the Rotary event, engaging existing groups, as recommended in the CCC&E literature, and making use of small and large group formats, are likely to be effective strategies. The literature highlights the importance of groups to provide social support for transitioning away from established norms, habits and socially organized ways of acting (e.g. refs). For these reasons I worked with an existing Rotary group, holding the engagement event in their usual meeting time and place, and fitting into their practice of periodically inviting outsiders into the club as guest speakers. Participants' active involvement in the conversations and their informal interactions including joking and swearing certainly suggested that they felt 'at home' in this setting. The literature suggests that such benefits of group engagements could be extended by engaging peers as facilitators.

In the Rotary event, there were noticeable differences in the types of conversations in the whole group with everyone together compared with the pairs and small groups. Statements made to the whole group were more formal, structured and definitive, for example about climate change being a hoax, while the small group conversations were informal, questioning each other, testing whether and in which circumstances climate change and climate solutions could be accepted. Although the Rotary event suffered from a typical limitation of group engagements in that it was difficult to hear from quiet participants, it is interesting that the two people who did not speak in the large group spoke quite a lot in the small groups. This may be related to the fact that they could choose their interlocutors in the small groups: they were able to self-select into groups and the researchers were largely absent. These observations

suggest that both small and large group conversations are useful because they generate different kinds of interactions and different statements of view.

In summary, the various aspects of engagements, including their purpose, format, timing, sequencing, and choice of facilitator, can be analyzed by their specialization and semantic codes and thus matched to the audience's codes. The Rotary and think tank events point to the potential for such engagements as forums for participants to practice translation and transformation.

#### **8.4.2 Maximizing value for engagers**

Engagement events similar to those held in the present study could perform a useful function for those commissioning and carrying out the engagements to gain an understanding of others' knowledge practices and perspectives on the issue. Particularly for commissioners and engagers such as academic researchers, government agency staff and other public policy influencer, lay participants' knowledge practices are likely to be quite different to their own. As one of the Rotarians said to me, "you didn't hear everything you wanted to hear, and that was good for you because it's a different point of view from here" (Geoff). My Principal Supervisor expressed a similar sentiment in his blog post reflecting on the event:

"I don't often find myself in conversation with folks who are so sceptical about climate change. It was a fascinating experience to see how people with a very different position to your own construct and justify their views" (Riedy, 2012).

Similarly, prior to the roundtable my supervisor and I were unaware of the content and boundaries of the think tankers' constellations, and the fact that one of the think tankers (Tim) perceived carbon pricing as a form of government intervention rather than a market mechanism.

The Rotary and think tank events point to the potential for climate change engagers to develop skills in 'reading' codes and constellations both in the moment and in post-event analysis, and to respond by tailoring their communications (message, medium and methods) accordingly. Engagement forums could be useful for identifying participants' legitimation codes and the content of their constellations (such as Tim's carbon pricing constellation) to inform the subsequent development of CCC&E strategies and messages. In particular for lay audiences the unfocused group format was well suited to these purposes, as a way of lessening the influence

of the engager or researcher and letting participants' discourses and interactions proceed in a "naturalistic" way (Mackay, 2012). Such forums could also identify potential messengers in a peer-to-peer engagement model, including participants who sometimes 'bounce' to the codes required for transformation. Finally, the unfocused group format employed in this research was useful for eliciting participants' responses about what climate change means to them and for observing how the discourses were expressed in interaction with other participants. It thereby proved to be a good way for the researchers involved to investigate these phenomena.

## **8.5 BEYOND CCC&E**

In this thesis I have suggested that CCC&E is but one part of the picture when it comes to achieving the goal of getting more people to take more substantial action on climate change. In addition, changes in other fields such as education as well as broader systemic and structural changes would need to occur. On the former, the task of giving people access to a knowledge code and a rhizomatic code, that is, expanding their code range, connects with formative processes of legitimation code development in childhood and beyond, including through the education system. As alluded to earlier, this relates to contemporary debates in education about how best to do this (see section 7.4).

In relation to other systemic and structural changes, Brulle (in Johnson, 2012, p. 982) suggests that a sustainable society may require "a tough and confrontational political/cultural struggle" that he suggests makes communication scholars uncomfortable and thus hesitant to pursue the types of transformative CCC&E strategies outlined here. Engaging with the challenges of pursuing systemic and structural change would require a transformation of sorts for CCC&E scholars and practitioners, from a predominant focus on the individual as an autonomous agent, unaffected by socially organized denial, to addressing the broader forces at play. It would require a shift in the purpose and design of CCC&E, from single, immediate interventions that are directly relevant to climate change (e.g. behavior change approaches) to those with a longer and broader arc, geared towards creating systemic and structural changes. The challenge is taken on board at a theoretical level in Social Practice Theory, for example, but its insights and those from other sociological theories would need further translation into, and integration within, CCC&E practice.

Building capacity and social capital towards systemic and structural change would require a significant shift from ‘top down’ to ‘bottom up’ practices that are much more decentralized through peer-to-peer networks, even though establishing such systems might be initiated centrally. While public policy influencer and other CCC&E practitioners could provide information and advice as required, in the main it would require them to trust others – to devolve responsibility and direction to such networks, to allow their own climate change meanings and solutions to evolve organically.

Finally, while some of the “tough and confrontational political/cultural struggle” might be inevitable, it would seem that there is fruitful work to be done in diffusing the battle amongst Australian politicians as described in section 8.3.2 (transformation). This seems particularly pertinent given survey findings in a number of countries that to a large degree, voters take their cues on climate change from political leaders. For example, in the United States, the most powerful determinant of whether someone accepts climate change as problem is whether they vote Democrat or Republican, more so than other factors such as their level of education, science comprehension, gender or age (McCright and Dunlap, 2011; Kahan et al., 2012). A similar split between Liberal-National voters and Labor and Greens voters has been found in Australia (Reser et al., 2012). Initiatives to get resisters to the table and to ease political-ideological battle (8.3.2), for example by focusing on common ground solutions, might also encourage politicians to find constructive ways to talk to their constituents about climate change. If constituents take these cues from their political leaders and take action, this would reinforce to politicians, think tankers and other public policy influencer that the community supports and is involved in climate action, thereby reinforcing the suspension of the political battle, and so on. In these ways, the initiatives could help to establish a virtuous circle in the public debate in place of the current vicious circle.

## **8.6 CONCLUSION**

Based on the principles articulated in chapter 7, this chapter made a number of suggestions for communicating to and engaging lay audiences and public policy influencers. Its starting point was that the message, the medium, the messenger and the methods all matter because they can take different forms that are underpinned by different cosmologies (expressed through legitimation codes and constellations). These interact with the audience’s cosmologies to produce a match or clash between the two.

Some illustrative examples were offered of the kinds of CCC&E that could encourage lay audiences to accept climate science, take action themselves, and support policy responses for systemic change. Based on the Rotary conversations, the existing carbon pricing communications were shown to have produced code clashes and constellation clash. Alternative translation and transformation communications in support of carbon pricing were suggested. These make use of analogies and metaphors that are simple, local, tangible and personally relevant, such as ‘leveling the playing field’, making the (school) rules fair, and choosing between alternative products at the supermarket. In a transformation strategy, such concepts could potentially bridge the gap between the audience’s knower code and prosaic code and the goal of code drift towards a knowledge code and rhizomatic code.

For public policy influencers, translation revolves around working with existing ideologies, for example to find common ground solutions. Transformation is more challenging because it would require public policy influencers to develop policy proposals on a stronger evidential basis and to weaken the ideological basis if it is in conflict with the evidence. The chapter made some suggestions for encouraging resisters to come to the table as a crucial first step towards transformation, and proposed some initiatives that could operationalize these moves and encourage others to follow suit. These include demonstrating a willingness to compromise (i.e. to weaken ideological preferences), making the code shifts explicit, and encouraging resisters to come up with their own climate change solutions.

The study findings suggest some methodological implications for designing engagement events that are productive and beneficial for participants as well as the commissioners/engagers of such events. The Rotary and think tank events point to the potential for engagement events to raise participants’ self-awareness of their cosmologies, and be a forum in which to practice translative and transformative moves. It would seem important to match the format of the engagement events to participants’ cosmologies, with implications for event timing, for example to follow extreme weather events for lay audiences (reflecting a knower code and a prosaic code), and event sequencing, for example to aim to start with high level agreement for public policy influencers (reflecting a rhizomatic code). For commissioners and engagers, engagement events represent an opportunity to hear perspectives on climate change that might be very different to their own, thereby illuminating the contours of the public debate.

Finally, systemic and structural changes beyond the realm of CCC&E are required to facilitate more people taking more substantial action on climate change. Some suggestions were made to encourage communication practitioners to engage with the need for systemic and structural change, and for making the current “political/cultural struggle” (Brulle, in Johnson, 2012) a more constructive one, or a catalyst for finding ways to address climate change with less struggle.

The chapter’s purpose and ethos was to make some suggestions and point to the challenges of CCC&E and beyond, that together set out an agenda for further research. In particular, the transformation and ‘beyond CCC&E’ initiatives for public policy influencers would benefit from further research including ‘real world’ testing that engages the CCC&E practitioners and others who would put these approaches into practice. Areas for further research are returned to in chapter 9, the conclusion to the thesis.

## **CHAPTER 9: CONCLUSION**

### **9.1 INTRODUCTION**

This study set out to understand people's views about climate change and how they shift in interaction with others, and how these insights could inform communication and engagement initiatives to further engage people in responding to climate change. The purpose of this concluding chapter is to briefly summarize the findings of the thesis (9.2), outline the study's contribution to knowledge (9.3), and discuss some of its limitations and issues for further research (9.4).

### **9.2 SUMMARY OF FINDINGS**

The literature review (chapter 2) revealed a rich and wide-ranging literature that deals with questions around climate change views and climate change communications and engagement (CCC&E) responses. It identified two main bodies of literature, psychological and sociological, that contribute a number of insights to the study's research problem and questions. The psychological literature reveals the ways in which views are shaped by individual thought processes and attributes such as values, attitudes, worldviews and emotions. The sociological literature considers climate change views as products of power relations, the political economy, social statuses, cultural and emotional norms, and socio-cultural practices. Sociological approaches show how phenomena that at first glance might appear to solely reflect individual choices and thought processes are also reflections or expressions of social, cultural, political and economic systems. Amongst other things, this enables theorization of "socially organized denial", by which climate literate people nonetheless ignore climate change in their daily lives. Both the psychological and sociological literatures contribute valuable insights into 'knowers' and 'knowing', to use the terms introduced in section 1.2, relating to people's attributes, mental processes and the broader sociocultural forces that shape their statements about climate change. What could helpfully complement these approaches, I argued, is a focus on knowledge itself, that is, the nature and characteristics of people's statements about climate change. Thus, the principal task for this study was to identify participants' statements of view and to analyze their organizing principles.

The study adopted a qualitative research framework in order to investigate participants' own expressions and meanings of climate change. An instrumental case study approach was adopted, with two contrasting cases in the form of a lay (Rotary) group and a group of public policy influencers (think tanks) from across the political-ideological spectrum. Each group participated in an engagement event, a two hour 'modified focus group' facilitated by the researcher. The main purpose of the events was to hear participants' expressions and meanings of climate change, and for them to consider others' views. The Rotary event involved conversations in pairs, small groups and the whole group. The small group conversations were mostly unprompted by the researcher (and unheard until listening to the recordings). The think tankers responded to three central questions posed by the researcher with additional questions posed by participants to each other. In addition to the events, a select number of participants were also interviewed two to three months after each event, to seek participants' experiences of the events and to further explore views expressed in the events.

The event and interview data were analyzed using the LCT dimensions of Specialization and Semantics, and the concept of constellations. For each case, analysis of specialization codes and semantic codes was carried out in three stages, progressing from 'thick description' in which participants' quotes were foregrounded (stage 1), to thematizing the thick descriptions in non-theoretical terms (stage 2), to analyzing the data in terms of the two kinds of legitimation codes (stage 3). The process served to generate progressively more abstract, condensed and theoretical findings while maintaining empirical fidelity. The theory enables both portability of the findings to other populations that share the same codes, as well as a systematic basis on which to compare and contrast different people's statements of view on the basis of the statements' organizing principles (their legitimation codes). Constellations were identified by observing the ways in which participants tended to group together concepts that they evaluated positively or negatively. The final phase of data analysis involved analyzing shifts in participants' views and common ground that they found.

The key finding from both case studies can be summarized as: *it is the cosmologies that matter*. It is not the climate change subject matter that determines acceptance or rejection of climate change or climate responses but the legitimation codes and associated constellations underpinning the subject matter. As described below, the two groups' constructions of climate



change, as well as the basis on which they made their claims (for example on lived experience or scientific data), were found to differ markedly, reflecting two different cosmologies.

### ***Rotary views and shifts***

On the few occasions that Rotary participants talked about physical climate change, the conversations quickly turned to the implications for action by different parties. Humans were said to lack agency and therefore responsibility for taking action, or alternatively, “dirty” countries (China, India) were responsible while “clean” countries such as Australia were innocent. Participants also translated the impersonal, complex abstractions of physical climate change into simple, local, personal lived experience of weather events, for example, suggesting that the end of the drought signified that climate change did not exist. In these ways their constructions related to personal experience of weather, and to various parties’ roles and responsibilities, rather than scientific concepts such as causative mechanisms: a knower code (pertaining to subjective knowledge and relations between actors). The simple, local, tangible nature of their constructions indicates a prosaic code (concrete and simple).

The climate change debate was described in binary terms, as a duel between powerful interests or a fence with two sides. Climate change was something to “believe in” or not, a matter of opinion. In this regard they took their cues from trusted sources such as media commentators and politicians, but not climate change experts, again reflecting a knower code. The simple binary form of their construction of the issue indicates a prosaic code.

Participants inhabited a world of ‘us’ and ‘them’, ‘good’ and ‘bad’, in which climate change and associated concepts were assigned to one of two constellations. One of these was positively evaluated (‘good’) and the other negatively evaluated (‘bad’), with judgments made on the basis of self-proclaimed group identity (such as being Christians and Liberal Party voters) and in accordance with trusted sources’ statements. Solutions in the ‘good’ constellation that participants supported rested upon the right type of person as a community-minded citizen “doing the right thing”, reflecting a knower code. They were also simple, common sense, everyday, local, tangible, and addressing pressing problems rather than those in the distant future, reflecting a prosaic code. Thus they represented code matches with participants’ knower code and prosaic code. In contrast, while several solutions were assigned to the ‘bad’ constellation, one in particular, the carbon tax, was singled out for particular opprobrium. It was promoted by Labor and Greens politicians, in participants’ ‘them’ constellation, and was

opposed by the Liberal Party, in the 'us' constellation. Its complex, abstract, intangible nature, reflecting a rhizomatic code, clashed with participants' prosaic code, thus representing a code clash and a constellation clash.

On several occasions, participants' stated views shifted from climate change being a "hoax" to it being a real problem that is worthy of action, and they were able to find agreement amongst themselves on the types of actions that should be pursued. Generally, such shifts and areas of common ground occurred when:

- humans were portrayed as having agency to deal with the problem;
- solutions were proposed or carried out by players within the 'us' group;
- they used simple, tangible, specific examples that were manifestations of more abstract concepts.

These findings are congruent with those in the literature about the importance of emphasizing agency (e.g. O'Neill & Nicholson-Cole, 2009), using in-group messengers (e.g. Moser, 2010) and communicating simple, everyday examples (e.g. Lejano et al. 2013). What LCT adds is an understanding of what links and underpins these three characteristics – that is, their organizing principles – and thus contributes broader principles for effective communication and engagement, beyond individual features. In LCT terms, the first two of the characteristics listed above indicate a knower code and the third a prosaic code, thus representing a code match with the dominant codes of the group. Almost universally across participants and various topics of conversation, the Rotary constructions of climate change were underpinned by a knower code and a prosaic code. This is significant because it represents code clashes with the impersonal, intangible, complex abstractions of climate science and systemic, structural climate responses such as carbon pricing. An implicit first step for CCC&E is to find ways to express the issue and solutions in ways that resonate with people by matching their codes and constellations.

### ***Think tankers' views and shifts***

In a forum previous to this research, a panel of think tankers described 'ideology' and 'evidence' as closely informing their positions on a range of issues. These concepts were useful heuristics for understanding the roundtable conversations, in that 'ideology' was found to signify stronger social relations and 'evidence' stronger epistemic relations. In contrast to the

Rotary participants, the think tankers shared a *rhizomatic code* but shifted between a *knowledge code* strongly based on 'evidence', a *knower code* based on 'ideology', and an *elite code* in which 'ideology' and 'evidence' were integrated.

The think tankers constructed physical climate change, as known through climate science, and the climate change issue or debate, as two distinct kinds of knowledge practices with different bases of legitimacy. Climate science was characterized by a knowledge code and a rhizomatic code, while the climate change debate was portrayed as being dominated by the knower code and prosaic code of the media and 'ordinary people'. Thus, the think tankers identified code clashes between climate science and the public debate. In contrast, they constructed their own and other public policy influencers' input to the climate change debate as being underpinned by a rhizomatic code and shifts between three specialization codes (a knowledge code, elite code and knower code) depending on the context.

Participants proposed three types of problems and solutions that were underpinned by different specialization codes. The first of these identified that policy positions had become too ideologically based without enough evidence: a knower code. The solutions revolved around strengthening the evidence base, particularly to take heed of the climate science. Think tankers' strong ideological basis could be retained and opened up for debate, or weakened, for example to lessen the 'tribal battle' that played out in the media and amongst think tankers. These represent shifts from a knower code to an *elite code* or a *knowledge code*. A minority view was expressed that climate responses are problematic insofar as they are geared towards reducing emissions without fully taking into account their negative societal impact and ideological incompatibility (a knowledge code). Solutions should be more fully informed by and evaluated on their compatibility with 'ideology', and incompatible responses should not be pursued even if this means foregoing emission reductions (a knower code). The third type of problem and solution did not involve a code shift, but would allow public policy influencers to retain their strong political ideologies (a knower code) and to pursue common ground on ideologically-compatible solutions.

Participants clustered together solutions into one of three constellations of stances. The constellations were demarcated on the basis of participants' preferred levels of government intervention, which reflected their political ideologies. The constellations were central to the

outcome of participants finding areas of common ground, or not. In short, finding common ground was associated with a code match and constellation match. Common ground was not found or it disintegrated when a code clash or constellation clash occurred.

Some differences between participants were observed, in that they tended to gravitate towards either a knower code, where positions on climate change were strongly shaped by ideological preferences, or a knowledge code, where scientific data was important and ideology was downplayed. Further, the knower code tended to be associated with the anti-intervention constellation, and a knowledge code or elite code with the pro-intervention. This is perhaps no surprise given that rapid and widespread responses to climate change that the science implies are required (knowledge code), tend to be more compatible with a pro-intervention than with an anti-intervention position.

### ***Rotary and think tankers***

Bringing together the Rotary and think tank findings highlighted a number of differences in the way they talked about climate change. For example, the Rotary participants' opposition to the carbon tax was grounded in the personal, relating to the Gillard government taking money from people, individuals spending their compensation money on poker machines, and the unfairness of letting 'dirty' China and India off the hook while 'clean' Australia was penalized. In these examples the Rotarians turned the abstract, impersonal concept of carbon pricing into concepts that were personal, related to fairness and morals, and more tangible in terms of giving and spending money, poker machines, individual politicians and countries described as if they were individuals. Thus, their constructions were underpinned by a knower code and a prosaic code.

In contrast, four of the think tankers supported carbon pricing as shifting governance and incentive systems in the right direction towards climate action. The fifth was opposed to it, based on his ideological opposition to government intervention and the insurmountable challenges of incentivizing countries to act on global externalities. These are abstract and complex concepts that reflect a rhizomatic code.

The differences in Semantics highlight the different expressions of social relations in the two groups. The think tankers' constructions were based on complex and abstract political

ideologies that were underpinned by a rhizomatic code. Rotary's were personal and tribal, based on what trusted sources said and the fairness or unfairness of countries' actions with countries conceived of as individual people, indicating a prosaic code. In sum, the differences between the two groups' constructions of climate change reflect knowledge practices that are underpinned by different semantic codes and different expressions of social relations.

### ***Implications for CCC&E***

Chapters 7 and 8 applied the empirical findings of chapters 4, 5 and 6, together with insights from the literature, to make recommendations for CCC&E. Chapter 7 took up the opportunity identified in the literature review to reconceptualize CCC&E principles and strategies in terms of their organizing principles. It reconceptualized Brown and Riedy's (2006) concepts of translation (meeting people 'where they are') and transformation (shifting 'where they are') in LCT terms, so that translation represents a code match, and transformation a code drift or code shift. This provided the foundation for making suggestions for CCC&E for lay audiences and public policy influencers , in chapter 8.

Chapters 7 and 8 also picked up the earlier chapters' findings on shifts, which show that the 'skeptical' or 'denier' label that might otherwise be applied to the Rotary participants is unduly restrictive because they sometimes accepted climate change as a problem worthy of action. More generally, the findings suggest that there is an untapped opportunity for CCC&E to engage the 'unusual suspects' by ensuring that CCC&E matches, rather than clashes with, their cosmologies (translation). The findings also point to the potential for translation to be the first step towards transformation. To some extent the observed political-ideological clash in the think tankers' conversations is inevitable and so moving forward on the issue is likely to require their transformation towards a weaker ideological basis and stronger evidential (climate science) basis. Chapter 8 described some of the moves the participants took in this direction and offered some suggestions that could be pursued with similar audiences more generally. For lay audiences, these include emphasizing the personal qualities of climate scientists (translation) or using familiar analogies to communicate the science (transformation); encouraging action on the basis of the good citizen "doing your bit" (translation); and building support for systemic change such as carbon pricing by invoking concepts of fairness and the responsibility of big polluters (transformation). For public policy influencers, translation means retaining their ideological preferences and finding common ground, while transformation

requires a change in their modus operandi to weaken the ideological basis if it conflicts with the science.

### **9.3 CONTRIBUTION TO KNOWLEDGE**

The study has made a number of theoretical, substantive and methodological contributions to knowledge, as outlined below.

#### **9.3.1 Theoretical contributions**

Theoretical contributions relate to each of the study's three research questions:

- analyzing statements of view in their own right, that is, analyzing 'relations within' knowledge;
- understanding climate change views as being dynamic rather than static; and
- reconceptualizing CCC&E in terms of cosmologies (codes and constellations).

In relation to the first contribution, novel findings of the study arise from the analyses of knowledge itself, in this case statements of view about climate change, which demonstrate the properties and powers of the statements. In this regard, a significant contribution of the study was in demonstrating that *it is the cosmology that matters*. In both the Rotary and think tank conversations, it was not that climate change per se or climate responses were uniformly rejected, but rather, acceptance or rejection rested on the legitimation codes and associated constellations underpinning the subject matter. Participants assigned climate change and responses to it to the 'good' constellation when the codes underpinning the messages matched their own (code match), and to the 'bad' constellation when the codes conflicted with their own (code clash). These code-dependent shifts also mean that it is misleading and limiting to label such people as climate change skeptics or deniers, regardless of whether these terms are further delineated into categories such as trend, attribution and impact skepticism (Rahmstorf, 2004) or impact and response skepticism (Capstick & Pidgeon, 2014). Similarly, both groups tended to find common ground on solutions that matched their legitimation codes and the constellations generated by those codes. The findings about the importance of cosmologies present untapped opportunities to engage the 'unusual suspects': both lay people and public policy influencers outside the political left and the government intervention constellation.

Analysis of the organizing principles of climate change statements enabled a consistent basis on which to compare and contrast statements and the knowledge practices of audiences. In

this regard, the study revealed the code clashes between the discourse of climate science and that of lay people. It also demonstrated that this need not be the case: the science can be 'translated' into lay people's knower code and prosaic code, to instead create a code matches. This contribution builds upon and complements existing research findings about greater acceptance of climate change when framed in simple and concrete terms in ways that highlight personal and societal efficacy. The conversations reported in the study demonstrate this effect in motion, in the shifts made when a code match replaced a code clash. The study contributes a further finding that effective communications between participants matched all three elements of specialization codes, semantic codes and constellations, which forms the basis of CCC&E recommendations.

The second major contribution of the study was its conceptualization of climate change views as being dynamic rather than static. By analyzing the organizing principles of statements, the study was able to show the ways in which they shifted throughout the engagement events. Changing from a static to a dynamic conception of views makes an important contribution because it means that people do not necessarily hold a single, consistent, immovable position as a 'believer' or a 'denier'. It opens up the possibility that shifting views might be a pathway towards reaching agreement that climate change is a serious problem worth addressing, and towards finding common ground on solutions. The research identified participants' shifts from dismissing to accepting climate change and adequate responses to it. Understanding the basis for shifting views also opens up possibilities for facilitating shifts through CCC&E.

This brings us to the study's third major area of contribution, in bringing together CCC&E and LCT concepts for the first time. A number of specific contributions arise. The first is the simple but useful conceptual one afforded by the concepts of 'knowers', 'knowing' and 'knowledge', which is that the properties of people's climate change statements can vary independently of their personal attributes, to a point (addressed below in relation to code range). This enables one to go beyond audience types that are based on psychographic or sociodemographic attributes (such as Community Based Social Marketing categories of "settlers", "prospectors" and "pioneers") and instead – or in addition – to think of code range and movements between codes (or topologically, movements between points on the planes). Amongst other possibilities, it means that a climate scientist or policy analyst can potentially communicate in ways that are simple, local, tangible and personally relevant to a lay audience ("your kids"). Or

that although I am not a free marketer, I can identify the boundaries and contents of a free market climate change constellation, communicate in ways that are congruent, and attempt to find common ground. Some CCC&E practitioners are already doing this;<sup>43</sup> LCT provides ways of systematically analyzing what is going on in the code and constellation movements, and points to ways of designing CCC&E to facilitate such movements.

A further contribution of the study to CCC&E is its reconceptualization of CCC&E principles and strategies in terms of their cosmologies. The study demonstrated how the cosmology of each element of CCC&E (message, messenger, methods) and of the audience can be analyzed, to provide a systematic basis for matching the two (translation) or shifting the audience's codes (transformation). In this way, the study contributed an alternative conceptualization of translation and transformation to complement Brown and Riedy's (2006) original approach based on developmental psychology. In the form of code match (and constellation match) for translation, and code drift and code shift for transformation, the task for transformation becomes spelt out as changes in positions on the specialization and semantic planes. My hope is that this makes a useful addition to the existing literature which can tend towards portraying transformation as an enigma.

The main implication of the LCT reconceptualization is that transformation potentially becomes a smaller ask of lay audiences than might first appear, for two reasons. The topological nature of the code planes allows transformation to be understood as a *relative* change, that is, about strengthening and weakening code dimensions, rather than an entire state change (shift) from one code to another. This is known as 'code drift' (Maton 2015). An audience that shares a knower code and a prosaic code needs only the keys to access central ideas of climate change and responses, not necessarily to make the full code shift to a knowledge code and a rhizomatic code. In addition, the chapter 8 recommendations showed the possibilities of using familiar, tangible, personally-relevant content matter to convey more complex underlying principles, as a Rotary participant did in explaining cumulative impacts through the example of cigarette butt litter.

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<sup>43</sup> For example George Marshall's work with conservatives in the UK and with the Tea Party in the US (Marshall, 2014).



The study demonstrates another ‘value-added’ of LCT analyses to CCC&E in that the concept of audience code range helps to show why some messages are likely to work for multiple audiences, such as the bathtub analogy (8.2.1), while others are not. Empirical research in other LCT studies has found that typically, audiences who share a knowledge code and a rhizomatic code (for example, think tankers) can shift to a knower code and a prosaic code, but the reverse does not hold for audiences whose knowledge practices are underpinned by a knower code and a prosaic code (Maton 2014). The same pattern was observed in the engagement events, whereby the think tankers demonstrated their adeptness at shifting between codes, while time and time again the Rotary participants’ constructions were underpinned by a knower code and a prosaic code. Thus, messages underpinned by a knower code and a prosaic code would be understandable and accessible to both audiences. On the flip side though, such messages have limited explanatory power in relation to the complex, abstract, global phenomenon of climate change – hence the rationale for transformation.

Finally, the study showed that LCT insights can be complementary: they can be incorporated into CCC&E alongside other approaches. The recommendations for CCC&E in chapter 8 are based on an integration of the LCT reconceptualization of CCC&E principles and strategies, with insights from the psychology literature about working with people’s values, emotions, worldviews and identity.

### **9.3.2 Substantive contributions**

Substantive findings relate to the views that were expressed by the two groups involved in the study, the Rotary club and think tankers. The theory employed in the study (LCT) allows portability to apply findings more generally to other people who share the same codes as these groups. The Rotary participants are taken to represent a subset of ‘resisters’ of most forms of action on climate change, particularly carbon pricing. Given their role in the debate as resisters, the study makes important contributions in identifying the *cosmologies* of statements (rather than content level topics or themes) in which they reject or accept climate change and particular responses to it.

To my knowledge, this is the first study of think tankers’ conversations about climate change. Given their influential role in the climate change debate, it is important to understand their views about climate change, the basis for those views, and the basis for differences between them. Significantly, the study showed that the think tankers were able to find some common

ground, despite their ideological differences. It identified both the subject matter of the areas of common ground and the underlying cosmologies.

Identifying the form and content of each group's constellations is a contribution that could inform the development of CCC&E. The constellations identified for Rotary and think tankers show the contours of their agreements and disagreements – and areas of actual or potential common ground where future efforts might be fruitful. For think tankers, one of these areas might be abolishing fossil fuel subsidies.

Finally, the study offers concrete suggestions for CCC&E for lay audiences and public policy influencers, in chapter 8. These suggestions could form the basis of empirical research with audiences to evaluate their effectiveness.

### **9.3.3 Methodological contributions**

The Rotary and think tank engagement events suggest that such engagements could serve beneficial outcomes for both participants and engagers or commissioners (see section 8.4). They point to the potential for such engagements to raise participants' self-awareness of their cosmologies and to practice translation and transformation. For example, some of the Rotary participants recognized that their antipathy towards the carbon tax was based on their political identity and hence disapproval of the Gillard government. There were also examples of the think tankers recognizing when their assessment of climate change responses had been too colored by their ideological stances and required a stronger basis in evidence, such as the implications of the IPCC's two degree guardrail.

The study found that the various aspects of engagements, including their purpose, format, timing, sequencing, and choice of engager, can be analyzed by their specialization and semantic codes and thus matched to the audience's codes. For example in relation to event timing, engagement events held immediately after extreme weather events might 'connect the dots' for lay audiences (reflecting a knower code and a prosaic code). Implications for event sequencing include aiming to start with high level agreement amongst public policy influencers (reflecting a rhizomatic code).

The events demonstrated engagement methods that are capable of getting people talking about climate change, shifting in their stated views and finding some common ground. In terms

of the non-climate translation strategy, the events showed that people can engage in constructive dialogue about climate change even if they start out with a “hoax” response. The LCT analyses suggest that code match and constellation match are key. Also, in terms of setting the tone of the forums, the researcher explicitly asked the Rotarians to consider other points of view and provided image prompts for them to consider the complexity of the climate change views. Thus, the event format was intended to create the first ‘bounce’ of transformation towards a knowledge code and a rhizomatic code. The think tank roundtable invitations and researcher’s introductory comments invited the think tankers to seek common ground. They were invited to weaken their ideological battle and explore the merits of each other’s arguments (strengthening the evidential basis). In these ways the event was intended for participants to practice finding common ground and to make the first ‘bounce’ of transformation towards evidence trumping ideology if the two were in conflict.

For event engagers or commissioners such as researchers and government agencies, such events could enable a deeper understanding of the substantive content of participants’ views, which might be quite different to their own, thereby potentially providing input to public policy decisions or to the design of CCC&E. As demonstrated in this study, such events also provide opportunities to better understand participants’ processes of negotiating differing viewpoints, shifting views, and finding agreement and common ground that could also inform CCC&E.

## **9.4 LIMITATIONS AND ISSUES FOR FURTHER RESEARCH**

Four main limitations of the study have become apparent, that could provide fruitful entry points for further research:

- ‘Knowledge’ has been analyzed, what about ‘knowers’ and ‘knowing’?
- Generalizability: who shares the same codes as participants?
- How do the LCT CCC&E concepts work in practice?
- CCC&E and beyond.

### **9.4.1 Knowledge, knowers and knowing**

One of the limitations of the study relates to its scope. In short, it analyzed ‘knowledge’ (statements or ‘knowledge claims’ about climate change) but barely touched on ‘knowers’ and their mental processes of ‘knowing’. Thus the findings represent only part of the story, the corollary to the literature that studies knowers and knowing but not knowledge. I chose to examine the knowledge claims themselves because that was the biggest gap in the literature

and the most significant contribution that could be made by employing LCT. However the psychological and sociological literatures also provide valuable insights into why people hold particular views and how they might be subject to change. Further research could seek to integrate findings about knowledge, knowers and knowing, which was too big a task for a doctoral study and perhaps too much for any one person. An alternative approach would be to pursue multidisciplinary collaborations between psychologists, sociologists and others.

In particular, further research could focus on building knowledge about how to achieve transformation, which is currently undertheorized. For example, how do psychological attributes, such as developmental stages, relate to legitimation codes? What role can psychological development play in transformation, for example through augmenting awareness of one's disposition and cosmology, and openness to other views and to change? Beyond peer affirmation, what other psychological support can facilitate the types of transformation outlined in the study? At a larger scale, what are some of the social, cultural, political and educational changes that could facilitate transformation, and how can they be realized?

#### **9.4.2 Generalizability**

The study analyzed the specialization codes and semantic codes of statements made by the Rotarians and think tankers. The theory (LCT) allows portability of these findings to other audiences who share the same codes as participants. In this case it means audiences who share Rotary's knower code and prosaic code, where social relations emphasize personal, subjective ways of knowing, and audiences who share the think tankers' elite code and rhizomatic code, where social relations are predominantly expressed as political ideologies.<sup>44</sup> Therefore CCC&E recommendations that are based on the Rotary and think tank codes should be valid for other audiences who share these codes. The challenge is in determining which groups in the general population share these codes, or for that matter, any particular combination of codes. Based on the growing body of empirical research enacting LCT to analyze other fields, it seems reasonable that other lay people are likely to share Rotary's codes and that other public policy influencers would share the think tankers'. However, to be certain, one would need to be able to systematically and rapidly identify audiences' legitimation codes. A way to do this has been

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<sup>44</sup> The think tankers switched between three specialization codes, but in the integration of 'ideology' and 'evidence' their knowledge practices were dominated by an elite code (see chapter 5).

developed in the form of a quantitative survey instrument that provides an assessment of specialization codes (Maton & Howard, 2015). In further research, the survey could be tested to see how well it relates to people's views about climate change. Similarly, survey methods for determining semantic codes could be developed for further research.

#### **9.4.3 LCT CCC&E in practice**

As mentioned in chapter 8, this is the first time that CCC&E and LCT concepts have been brought together, so at this stage the recommendations are a work in progress that would benefit from further research. It was emphasized that recommendations should be at least subject to message testing in further research, or ideally co-developed with members of the intended audience.

More broadly, empirical research is required to observe whether the LCT concepts as applied to CCC&E work in practice as expected. Questions of particular interest relate to the 'bounce' of transformation and to shifts in views. Firstly, research could investigate whether the concept of transformation as theorized here, as code drift in the form of a wave or 'bounce' towards other codes, works in the way intended, to cultivate an expansion in the audience's code range (e.g. from a knower code and prosaic code towards also making a knowledge code and rhizomatic code accessible). As mentioned in section 7.4, the question here mirrors that in the field of education about how best to give students the 'keys' to access different forms of knowledge. Semantic waves have been found to be crucial in teaching complex and abstract concepts (e.g. Maton, 2014) and so transformation that is built upon specialization waves and semantic waves would appear to hold promise.

Secondly, empirical research could investigate to what extent shifts in views 'stick' beyond the immediate conversation and forum. The literature suggests that the effect is probably limited in the absence of broader change. It points to the need to concurrently work towards changing systemic and structural drivers (Lorenzoni et al., 2007). This includes the types of transformation and 'beyond CCC&E' initiatives considered in chapter 8.

#### **9.4.4 CCC&E and beyond**

Chapters 7 and 8 acknowledged that LCT forms only one element of developing effective CCC&E, and effective CCC&E is only one part of what is required to achieve the goal of more people taking more substantial action on climate change. Chapter 8 also noted that bringing all

parties to the table to jointly pursue climate solutions is a hugely challenging task and it is not the place for this thesis to come up with the answers – only to make some suggestions and to point to the need for more research in these areas that ideally includes public policy influencers experimenting with different approaches. Similarly, the ‘beyond CCC&E’ initiatives would benefit from further research including ‘real world’ testing that engages the CCC&E practitioners and others who would put these approaches into practice.

## 9.5 CONCLUSION

This study investigated the climate change views of two contrasting groups of people. Its major contributions include:

- demonstrating the utility of analyzing the characteristics of knowledge claims themselves, and thereby delivering new insights into people’s views about climate change;
- conceptualizing climate change views as being dynamic rather than static, and identifying the code and constellation shifts associated with shifting views and finding common ground; and
- offering new ways of thinking about translation and transformation strategies of CCC&E, by reconceptualizing them in terms of cosmologies to understand what is being matched in translation and shifted in transformation.

Looking forward, the Rotary and think tank conversations suggest some grounds for cautious optimism that (more) people can be encouraged to engage constructively on the issue and rise to the challenge of taking adequate action. In the engagement forums, both groups displayed a surprising amount of willingness to engage with the issue. In particular, it was promising that the think tankers took time out of their busy schedules to explore each other’s views and to attempt to find common ground. Given the few opportunities for people to engage in dialogue about climate change, perhaps there is a latent willingness to engage that could be tapped into by holding more such forums, or ideally to set them in train on a peer engagement model.

Other grounds for cautious optimism include the areas of common ground that the think tankers found despite their ideological differences. Usefully, they also identified the limits of that common ground, or solutions that would need to be pursued in a different way to be accepted in more than one constellation. In terms of CCC&E it is promising that the think

tankers recognized lay people's knower code and prosaic code (although not expressed in LCT terms) in describing their knowledge practices as being "about more than the science" and acknowledging the importance of "tribal leaders" and "lived experience". The think tankers also showed that they could match a knower code and prosaic code, for example in proposing messaging around "your kids".

The Rotary conversations showed the potential of translation strategies, in that participants accepted constructions of climate change and responses to it that matched their codes and constellations. This finding is a major step forward from an alternative view that would dismiss them as 'skeptics' or 'deniers'. In relation to transformation, the Rotarians themselves described concepts such as cumulative impacts in terms of more familiar things like litter from cigarette butts. CCC&E could make use of a similar strategy of expressing complex, abstract, evidentially-based concepts that are underpinned by a knowledge code and rhizomatic code by using simple, tangible, personally relevant analogies, to make transformation less onerous. Finally, the norm and expectation that participants expressed to "do your bit" and "do the right thing" would seem to offer policy makers, communicators and engagers further untapped opportunities. Expressing a similar sentiment, Norgaard (2009, p. 44) concludes:

Data from the above studies indicate that people DO care about climate change, and do support stronger climate policies. The notion that people already want to "do the right thing" is an extremely hopeful piece of information which can and should be used as the centerpiece of developing successful policy.

In 2013, the *World Social Science Report* (ISSC/UNESCO, 2013) issued an "urgent call" for social scientists to approach pressing environmental problems in ways that are "bigger", "bolder", "better" and "different", meaning:

- bigger in terms of having more social scientists to focus on global environmental change;
- bolder in reframing and reinterpreting global environmental change as a social problem;
- better at infusing social science insights into real world problem solving; and
- different in the way they think about and do research that helps meet the vexing sustainability challenges faced today.

My hope is that by building on the foundations laid by many others, this thesis has contributed to the “bigger”, “bolder” and “different” outcomes. Further, the combined insights of CCC&E and LCT should provide a solid foundation for “better” outcomes: real world problem solving that works towards adequately dealing with climate change.



## **APPENDICES**

**Appendix A: Information sheet for Rotary event**

**Appendix B: Consent form for Rotary event**

**Appendix C: Question and activity guide for the Rotary event**

**Appendix D: Question guide for Rotary interviews**

**Appendix E: Information sheet for think tank roundtable**

**Appendix F: Consent form for think tank roundtable**

**Appendix G: Question guide for think tank event**

**Appendix H: Question guide for think tank interviews.**

## Appendix A: Information sheet for Rotary event



### RESEARCH INFORMATION SHEET

#### “EXPLORING SOCIAL ISSUES THROUGH DIALOGUE”

##### WHO IS DOING THE RESEARCH?

My name is Eleanor Glenn and I am a PhD student at UTS. My supervisor is Associate Professor Chris Riedy.

##### WHAT IS THIS RESEARCH ABOUT?

This research brings a group of people together to talk about a current issue of public importance. It aims to find out about participants' different views as well as how participants negotiate and come to understand each other's views. I am also interested in the outcomes or impacts of the process such as shifts in participants' views.

##### IF I SAY YES, WHAT WILL IT INVOLVE?

I will ask you to be part of the dialogue event to talk about a current social issue (like a focus group). The event will be held at your usual group meeting place. It will be held outside business hours, probably on a weekday evening, for 2.5 hours. Tea, coffee and other light refreshments will be provided.

At the end of the event I will invite participants to register their interest in participating in a follow-up interview approximately three months after the event. If you decide to participate in the interview, I will ask about your experiences of the event and any outcomes or impacts on yourself or others. The interview will run for 20-30 minutes.

Some travel time will be required to attend the event. Interviews will be arranged at a mutually convenient time and place.

##### ARE THERE ANY RISKS/INCONVENIENCE?

In this research, “risk” means that you might experience feelings such as anxiety, fear, guilt, sadness or anger as a result of discussing difficult societal issues or having your views challenged by other participants. However this is a low level risk because the events have been carefully designed to encourage constructive dialogue rather than debate.

##### WHY HAVE I BEEN ASKED?

I plan to run two engagement events as part of this research so that I can compare and contrast findings. One event will be held with a community group, the other with people employed by government agencies. Your involvement in the Rotary Club of Liverpool West means that you fulfil the requirements for my research.

##### DO I HAVE TO SAY YES?

You don't have to say yes.

**WHAT WILL HAPPEN IF I SAY NO?**

Nothing. I will thank you for your time so far and won't contact you about this research again.

**IF I SAY YES, CAN I CHANGE MY MIND LATER?**

You can change your mind at any time and you don't have to say why. I will thank you for your time so far and won't contact you about this research again.

**WHAT IF I HAVE CONCERNS OR A COMPLAINT?**

If you have concerns about the research that you think my supervisor or I can help you with, please feel free to contact me on 9514 4965 or Chris Riedy on 9514 4964. If you would like to talk to someone who is not connected with the research, you may contact the Research Ethics Officer on 9514 9772, and quote this number: 2012-054.

## Appendix B: Consent form for Rotary event



### CONSENT FORM – Exploring Social Issues through Dialogue

I \_\_\_\_\_ agree to participate in the research project “Exploring Social Issues through Dialogue” (UTS HREC 2012-054) being conducted by Eleanor Glenn of the University of Technology, Sydney towards the fulfilment of her PhD.

I understand that the purpose of this study is to bring people together to talk about a current social issue, with the aim of finding out about participants’ different views as well as how participants negotiate and come to understand each other’s views.

I understand that I have been asked to participate in this research because of my involvement in West Liverpool Rotary Club. I am aware that my participation in this research will involve attending a dialogue event to talk with other participants about the social issue. I understand that the event will be held at Liverpool Catholic Club for 2.5 hours, from 6:15 – 8:45pm, on 31 July 2012.

I understand that I may also have the opportunity to participate in a 20-30 minute interview approximately three months after the event. I can request for the interview to take place at a convenient public location.

I am aware that the dialogue event will be video-recorded and the interview will be audio-recorded. The recordings will be used for the researcher (Eleanor Glenn) to analyse what occurred during the event and interviews and to ensure that she accurately reflects participants’ views in her PhD thesis and other publications.

As part of this research project Eleanor is also requesting your permission to take photographs during the dialogue event. I agree to having my photo taken during the event: **YES / NO**, AND I agree that the photos may be used in Eleanor’s PhD thesis and other publications such as newsletters, case studies and presentations, which I am aware may publicly identify me: **YES / NO**.

I agree that the research findings may be published using my real name: **YES / NO**, OR may be published using a pseudonym (a made-up name that does not identify me): **YES / NO**.

I am aware that I can contact Eleanor or her supervisor Dr Chris Riedy if I have any concerns about the research. At university Eleanor’s telephone number is 9514 4965, email address is Eleanor.L.Glenn@student.uts.edu.au, and address is 235 Jones St Ultimo (PO Box 123 Broadway 2007). Contact details for Dr Chris Riedy are: telephone 9514 4964, email Christopher.Riedy@uts.edu.au, at the same address.

I also understand that I am free to withdraw my participation from this research project at any time I wish, without consequences, and without giving a reason.

I agree that Eleanor Glenn has answered my questions about this research fully and clearly.

Date \_\_\_\_\_

Signature \_\_\_\_\_

Age \_\_\_\_\_

**NOTE:** *This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer (ph: +61 2 9514 9772 or [Research.Ethics@uts.edu.au](mailto:Research.Ethics@uts.edu.au)) and quote the UTS HREC reference number. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.*

## Appendix C: Question and activity guide for the Rotary event

<i>Conversation and activity prompts</i>	<i>Group format</i>
<p><b>1. Values and “Good Dialogue Guide”</b></p> <ul style="list-style-type: none"> <li>• What draws you to be part of this group? What’s important about what you do here together? What do you value about being part of this group?</li> <li>• “Good Dialogue Guide”: Dialogue, not debate. Suspend judgement, be open to changing your views.</li> </ul>	<p>Individuals speak to whole group.</p> <p>Researcher speaks to whole group</p>
<p><b>2. What is climate change? What does it mean to you?</b></p>	<p>In pairs</p>
<p><b>3. How have your views about climate change changed over time? Can you identify any people, events, TV, films that made an impact on you?</b></p>	<p>As above</p>
<p>Report back to group on 2. and/or 3.</p>	<p>Individuals report back to whole group</p>
<p><b>4. Eleanor’s brief introduction to framing and discourse</b></p> <ul style="list-style-type: none"> <li>• Climate change is framed differently in different discourses – who do you choose who to trust and who to listen to?</li> </ul>	<p>Researcher speaks to whole group</p>
<p><b>5a. “Views about climate change”: set of 7 images as prompts</b></p> <ul style="list-style-type: none"> <li>• Discuss: which framings and discourses about climate change can you identify? – your own and others’.</li> <li>• .</li> </ul>	<p>Conversations in 3 groups, one per table</p>
<p><b>5b. “Views about climate change”: conversation mapping</b></p> <ul style="list-style-type: none"> <li>• Which views about climate change have you identified?</li> <li>• Where are the differences, and why?</li> <li>• Where are the similarities: what common ground can you find?</li> </ul> <p>After 15 minutes:</p> <ul style="list-style-type: none"> <li>• What themes are emerging from the conversation map?</li> </ul>	<p>As above</p>
<p>Report back on conversation maps &amp; findings – table by table (the three groups)</p>	<p>Each group reports back to whole group</p>
<p><b>6. Reflections, learning</b></p>	<p>Back to original pairs</p>

<p><b>What have I learnt tonight? Has anything changed for me?</b></p> <ul style="list-style-type: none"> <li>• Have you learnt something tonight that could change how you talk to people who have different views to your own? Or anything else you would do differently after this event?</li> </ul>	
<p><b>7. Debrief</b></p> <ul style="list-style-type: none"> <li>• As above: What stood out for you tonight? Something you learnt about each other's views? Something you will do differently or think about differently after tonight?</li> </ul>	<p>Take turns around the whole group, 30 seconds per person</p>

## Appendix D: Question guide for Rotary interviews

**Introduction:** Interview purpose: to hear your experience of the event; whether you've thought about or done anything differently since the event; your opportunity to provide feedback; my opportunity to clarify any points with you. Not a test, no right or wrong answers.

**Ethics:** Ethics form; you can end the interview at any time; permission to record by Dictaphone?

### **Qu 1, reflections and feedback:**

- 1a: How would you describe what went on during the event, for example the interactions between yourself and the other participants?
- 1b: Can you think of an example where you had a positive or negative reaction to something someone said during the event?
- 1c: Do you remember your initial reaction when I introduced climate change as the topic?
- 1d: What did you like and dislike about the roundtable? What do you think worked or didn't work so well? Was it useful to start with values and the Good Dialogue Guide?

### **Qu 2, influencers:**

- 2a: Who or what would you say has most influenced your views about climate change over time?
- 2b: What media sources do you usually read, watch or listen to?

### **Qu 3, event impact:**

- 3a: During the event, did anyone introduce to you a new way of looking at the climate change issue?
- 3b: Since the event, have you done anything differently or thought about anything in a different way?

### **Qu 4, sustainability, climate change, and where to from here:**

- 4a: Have you come across the idea of sustainability? What does it mean to you?
- 4b: During the event, some people identified that the term "climate change" has become highly politicised, especially with the carbon tax, and it might turn people off actions that make sense regardless of what you think about climate change. Would it help to get people on board if the actions were part of a conversation about "sustainability" rather than "climate change"?
- 4c: Where do you see the climate change issue going in the next 10 or 20 years?

### **Qu 5, anything else:**

- Is there anything else you would like to add?

**Wrap up:** Thank you; repeat contact details for myself, my Supervisor and HREC; please get in touch if you have any questions or comments.



## Appendix E: Information sheet for think tank roundtable



### RESEARCH INFORMATION SHEET

#### Think tank roundtable on climate change and sustainability

##### WHO IS DOING THE RESEARCH?

My name is Eleanor Glenn and I am a PhD student at UTS. My supervisor is Associate Professor Chris Riedy.

##### WHAT IS THIS RESEARCH ABOUT?

This research project, called '*Exploring the social constructions of climate change and sustainability through dialogue*', brings together groups of people to talk about climate change and sustainability. It aims to find out about participants' different views as well as how participants negotiate and come to understand each other's views. It is also interested in the outcomes or impacts of the process such as any shifts in participants' views.

##### IF I SAY YES, WHAT WILL IT INVOLVE?

I will ask you to participate in a roundtable (a dialogue) with four to six other think tank representatives, my supervisor Dr Chris Riedy and myself. The roundtable will be held at UTS Broadway, on 10 December 2012, 2:00-4:00pm. Tea and coffee will be provided.

I will also ask you to participate in a follow-up interview approximately two months after the roundtable. I will ask about your experiences of the roundtable and any outcomes or impacts on yourself or others. The interview will run for 20-25 minutes and will be arranged at a mutually convenient time and place.

##### ARE THERE ANY RISKS/INCONVENIENCE?

In this research, "risk" means that you might experience feelings such as anxiety, fear, guilt, disappointment or anger as a result of discussing difficult societal issues, and/or having your views challenged by other participants. This is a low level risk because the roundtable has been designed to encourage constructive dialogue. There will also be opportunities to discuss any such feelings during or after the roundtable and the interview, if appropriate.

##### WHY HAVE I BEEN ASKED?

As part of my research I am interested in how representatives of Australian think tanks conceive of climate change and sustainability issues, and how these perspectives form in dialogue with other think tank representatives. Your role at (*name of think tank*) means that your views are of particular interest to my research.

##### DO I HAVE TO SAY YES?

You don't have to say yes.

##### WHAT WILL HAPPEN IF I SAY NO?

Nothing. I will thank you for your time so far and won't contact you about this research again.

**IF I SAY YES, CAN I CHANGE MY MIND LATER?**

You can change your mind at any time and you don't have to say why. I will thank you for your time so far and won't contact you about this research again.

**WHAT IF I HAVE CONCERNS OR A COMPLAINT?**

If you have concerns about the research that you think my supervisor or I can help you with, please feel free to contact me on 9514 4965 or Chris Riedy on 9514 4964.

If you would like to talk to someone who is not connected with the research, you may contact the Research Ethics Officer on 9514 9772, and quote this number: 2012-054.

## Appendix F: Consent form for think tank roundtable



### CONSENT FORM – Think tank roundtable on climate change and sustainability

I \_\_\_\_\_ agree to participate in the research project ‘*Exploring the social constructions of climate change and sustainability through dialogue*’ (UTS HREC 2012-054) being conducted by Eleanor Glenn of the University of Technology Sydney (UTS) towards the fulfilment of her PhD.

I understand that the purpose of this study is to bring people together to talk about climate change and sustainability, with the aim of finding out about participants’ different views as well as how participants negotiate and come to understand each other’s views. It is also interested in the outcomes or impacts of the process such as any shifts in participants’ views.

I understand that I have been asked to participate in this research because of my involvement in *{think tank name}*. I am aware that my participation in this research will involve attending a roundtable to talk with other think tank representatives about climate change, sustainability and ideology. I understand that the roundtable will be held at UTS Broadway on 10 December 2012, 2:00-4:00pm.

I understand that I am also being requested to participate in a 20-25 minute *face-to-face {Sydney} / telephone {Melbourne}* interview approximately two months after the roundtable (around 10 February 2013), *to be held at my workplace or a mutually convenient public location {Sydney}*. The interview will be scheduled closer to the time and I will have the opportunity to accept or decline the invitation to participate.

I am aware that the roundtable will be video-recorded and the interview will be audio-recorded. The recordings will be used for the researcher (Eleanor Glenn) to analyse what occurred during the roundtable and interviews and to ensure that she accurately reflects participants’ views in her PhD thesis and other publications. The recordings will only be viewed and listened to by Eleanor and they will be stored on a password-protected hard drive. I understand that in her publications Eleanor will name me as a participant and will attribute things I say to me.

As part of this research project Eleanor is also requesting my permission to take photographs during the roundtable. I agree to having my photo taken during the roundtable: **YES / NO**, AND I agree that the photos may be used in Eleanor’s PhD thesis and other publications such as newsletters, case studies and presentations: **YES / NO**.

I am aware that I can contact Eleanor or her supervisor Dr Chris Riedy if I have any concerns about the research. At university Eleanor’s telephone number is 9514 4965, email address is Eleanor.L.Glenn@student.uts.edu.au, and address is 235 Jones St Ultimo (PO Box 123 Broadway 2007). Contact details for Chris Riedy are: telephone 9514 4964, email Christopher.Riedy@uts.edu.au, at the same address.

I also understand that I am free to withdraw my participation from this research project at any time I wish, without consequences, and without giving a reason.

I agree that Eleanor Glenn has answered my questions about this research fully and clearly.

**Signature** \_\_\_\_\_

**Date** \_\_\_\_\_

**NOTE:**

This study has been approved by the University of Technology, Sydney Human Research Ethics Committee. If you have any complaints or reservations about any aspect of your participation in this research which you cannot resolve with the researcher, you may contact the Ethics Committee through the Research Ethics Officer (ph: +61 2 9514 9772 or [Research.Ethics@uts.edu.au](mailto:Research.Ethics@uts.edu.au)) and quote the UTS HREC reference number. Any complaint you make will be treated in confidence and investigated fully and you will be informed of the outcome.

## Appendix G: Question guide for think tank roundtable

**Introduction:** *A closed forum but not Chatham House rule; dialogue, not debate; first focus on sustainability and then climate change; the focus is on the climate change issue and appropriate responses, rather than your opinion of the climate science.*

### **Qu 1, sustainability from first principles:**

- Do you agree that we need to live sustainably on the planet?
- What do you mean by sustainably, what conditions would need to be fulfilled?

### **Qu 2: goals, change and ideology:**

- How far off are we from where we need to be on climate change, and what sort of changes might that require? Could they come about within existing systems or are radical changes required? How does that sit with your worldview or ideology?

### **Qu 3, values and social change:**

- *Eleanor describes research about intrinsic and extrinsic values<sup>45</sup>: intrinsic values are strongly associated with concern for and action on a range of social and environmental issues while extrinsic values are associated with non-concern and non-action. Given that the public sphere is dominated by extrinsic messages (for example through advertising), a question arises as to what sort of society that is creating, and whether it is conducive to dealing with these kinds of problems.*
- Question: What sort of society would facilitate sustainability or action on climate change? Alongside the policy and regulatory toolbox, could societal or cultural shifts also help?

**Qu 4, 5:** *Optional extra questions depending on where the conversation goes, to draw out participants' similarities and differences. For example:*

- *Are the systems that have fostered human ingenuity and technological solutions the same ones that have given rise to climate change? If so, what might be required to address this situation?*

### **Qu 6, common ground:**

- Which areas of common ground on climate change have you identified during the roundtable?

### **Qu 7: debrief:**

- Something that stood out for you from the conversation, something you'll take away from today.

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<sup>45</sup> Summarising Schwarz's (1992) cross-cultural model of human values that forms the basis of the Common Cause framework: [www.valuesandframes.org](http://www.valuesandframes.org)

- Looking forward: where is the climate change issue going in the next 10 or 20 years and what role will your think tank play?

**Wrap up:** *thank you; next steps including interviews.*

## Appendix H: Question guide for think tank interviews

**Introduction:** *Interview purpose: to hear your experience of the event; whether you've thought about or done anything differently since the event; your opportunity to provide feedback; my opportunity to clarify any points with you.*

**Ethics:** *Ethics form; you can end the interview at any time; permission to record by Dictaphone?*

### **Qu 1, reflections and feedback:**

- 1a: What were your impressions of what went on during the roundtable, compared with other types of forums?
- 1b: What did you like and dislike about the roundtable? What do you think worked or didn't work so well?  
[if not covered above: Was it useful to begin by setting up the tone and purpose of the dialogue? And to begin the conversation on sustainability rather than climate change?]
- 1c: Were there other areas you would have liked to explore?

### **Qu 2, roundtable impact:**

- 2a: What did you learn from the roundtable?
- 2b: Did anyone introduce to you a new way of looking at the climate change issue?
- 2c: Since the roundtable, have you done anything differently or thought about anything in a different way?

### **Qu 3, where to from here and your role:**

- 3a: Do you think there is a role for think tanks to do more collaborative work amongst each other and with other agents, to progress climate change and sustainability responses?
- 3b: Is it useful to bring together people with different views in this kind of engagement? What does this kind of forum do that other forums don't?
- 3c: What could make engagement forums more valuable?

### **Qu 4, anything else:**

- Is there anything else you would like to add?

**Wrap up:** *Thank you; repeat contact details for myself, my Supervisor and HREC; please get in touch if you have any questions or comments.*

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