

# The biopolitics of adaptation to a changing climate: Constructions of the adaptive capacity of Aboriginal and Torres Strait Islander Australians

**Author:**

Adams, Sophie

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# **The biopolitics of adaptation to a changing climate:**

## **Constructions of the adaptive capacity of Aboriginal and Torres Strait Islander Australians**

**Sophie Adams**

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



School of Social Sciences  
Faculty of Arts and Social Sciences  
University of New South Wales

2019



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## **Abstract**

I interpret the policy and practice of adaptation to the impacts of climate change as a contemporary site of biopolitical governance which has, since its emergence with modern biology in the eighteenth century, taken as its central problematic the interaction of human populations with their environments. Based on a Foucauldian analysis of policy and research texts about adaptation in a group of people identified as particularly vulnerable to climate change, the Aboriginal and Torres Strait Islander peoples of Australia, I argue that currently dominating this space is a discourse centred on building adaptive capacity through practices of caring for country. Deriving from systems ecology an understanding of adaptation as a natural, autonomous process within the social-ecological system, this discourse makes possible a powerful alternative representation of Indigenous peoples as uniquely resilient in the face of climate change impacts.

I argue that the discourse of adaptive capacity, which promises an integrated approach to the study and governance of the challenges of climate change, is a product of the pragmatic holistic logic of the concept of the ecological system. Incorporating critical perspectives about the social and political dimensions of human adaptation into a biological framework, it underpins a governmental vision of transformative adaptation driven by empowered communities. This discourse also naturalises adaptive capacity as an inherent property of the Indigenous community engaged in caring for country, however, recovering functionalist constructions of adaptive human systems long abandoned in the disciplines of geography and anthropology.

In the context of Indigenous Australia this discourse presents both opportunities and limitations. While it represents a valued recognition of a long history of engaging sustainably with environmental change and promises to open up roles in natural resource management across the continent, it also threatens to displace a



more historical reading of vulnerability to the impacts of climate change as an effect of the colonial processes of dispossession and marginalisation, and the claims on the state that the latter might support. I explore the ways in which the functional circularity of the construction of adaptive capacity of the social-ecological system thus circumscribes the politics of climate change adaptation.

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## Chapter 1: Introduction

In the eighteenth century, according to Michel Foucault's influential account, a number of developments came together that saw 'the entry of life into history' (2008: 141). This was the emergence of a particular way of governing people as members of a population, or what Foucault terms biopower, that 'assumed responsibility for the life processes' and brought them 'into the sphere of political techniques' (142). Underpinning the governance of human populations was another, more fundamental sense in which life 'entered' history: *a concept of life itself* that came about with the birth of modern biology. This new understanding of life saw it freed from the constraints of divine teleology and acquire a non-deterministic historicity in its engagement with its environment (Foucault 2002). The new ways of conceiving of life that were thus made possible have continued to shape understandings of the interaction of living beings with their environments.

Two centuries later, humans are facing impacts of anthropogenic climate change that can no longer be prevented. This is understood and governed as a task of adapting to environmental change that, I argue, can be seen as the latest iteration of the assemblage of ways of conceiving and administering human life that Foucault described as biopower. A form of governance that operates by leveraging the properties of life itself, this contemporary form of biopower takes as its target a capacity for adaptation that, drawing from the insights of the biological sciences, is considered to be inherent to all living things. Biopower monitors this adaptive capacity in human populations, identifies where it may be obstructed by external circumstances in the social, political, cultural and economic worlds, and intervenes to nurture it.

While a capacity for adaptation to environmental change is attributed to all life, a population that is considered to be uniquely adaptive – but also to face particular challenges in adapting that are the effects of its history – is the Aboriginal and Torres Strait Islander peoples of the Australian continent. The governance of Indigenous adaptation seeks to leverage this capacity and, in attaching the task of adaptation to various existing discourses of Australian Indigenous policy and politics, opens up various possibilities for communities in the pursuit of adaptation. This research examines the prospects and options offered to the Indigenous community as an adaptive subject in a changing climate. It identifies among these both opportunities valued by Indigenous peoples as well as political constraints, and shows how these are associated with conflicting representations of Indigenous peoples as both particularly vulnerable and adaptive.

The objective of the research presented in this dissertation has been to understand the discourse of adaptive capacity as it appears in the context of Aboriginal and Torres Strait Islander communities. The research has been guided by two questions: *what are the logics that constitute the discourse of adaptive capacity*; and *how do these logics construct the adaptive Indigenous subject*? I have employed a Foucauldian analytical approach to answer these questions through a close examination of how the discourse of adaptive capacity has come about, and how it has been taken up in the context of Australian Indigenous communities. This is an analysis that in turn offers glimpses of the implications of this way of approaching climate change adaptation for communities into the future. The account of the discourse of adaptive capacity presented in this dissertation adds to a growing body of critical scholarship about anthropogenic climate change that I introduce in the next section. In seeking to understand the trajectory of this discourse, I also reflect on the significance of this body of scholarship, including several lines of critical thought that have played an important role in defining the contours of the current discursive terrain of adaptation.

### **1.1 Existing climate change scholarship**

Responses to climate change as a threat to human life have been dominated by an alliance between climate change science, in its manifold forms, and the global

political project of governing climatic change. This involves, on the one hand, a mode of study grounded in the physical, chemical and biological sciences that is oriented primarily towards achieving an understanding of the drivers and dynamics of climate change sufficient to allow humans to adjust the composition of the atmosphere and thereby mitigate the problem. On the other hand is a mode of governance that implements these scientific prescriptions by administering the emissions of greenhouse gases from human activity. These tasks, undertaken by the Intergovernmental Panel on Climate Change (IPCC) and the United Nations Framework Convention on Climate Change (UNFCCC) respectively, is seen to reflect a division of labour between 'scientists as mapmakers and politicians as navigators' (Edenhofer and Minx 2014: 38). The study of what was initially referred to as the 'human dimensions' of climate change consisted mostly of quantitative analysis of its drivers and effects and was largely limited to a selective engagement with some parts of the social sciences, particularly the disciplines of economics, international relations and behavioural psychology (Shove 2010; Castree et al. 2014).

In 1998 Steve Raynor and Elizabeth Malone, reviewing the much wider scope of social scientific scholarship relevant and promising to the study of climate change, argued that climate change must be approached first and foremost as a product of and site of human *choice* – the political choices that must be made in order to address it as well as the choices that underpin the problem itself (Rayner and Malone 1998). An expanding body of work in the social sciences and humanities has since positioned climate change as an issue that – connected in its causes and effects to almost all aspects of human life – is inseparable from the diverse values and ends of human politics. Critical voices have pointed out that the construction of climate change as 'an environmental problem amenable to scientific analysis has not been especially helpful in figuring out how to respond politically because it ignores [...] the difficult and locally differentiated politics of responding to it' (Cohen et al. 1998: 342). It is argued that the scholarship and politics of climate change must therefore attend to the plural and diverse meanings that the issue holds in the specific contexts in which people engage with it (Hulme 2009). Drawing on work in Science and Technology Studies (STS) and feminist and postcolonial studies, scholars have also directed attention to the meanings at play



in the construction and deployment of scientific knowledge, and argue for attention to the politics that is invariably 'built into science at the upstream end' (Demeritt 2001: 307).

In the two decades since Rayner and Malone set out their research agenda for the social sciences, much has changed and much has stayed the same. There has indeed been a proliferation of engagement within the social sciences and humanities, and the study and governance of the 'human dimensions' of climate change have opened up, now encompassing a variety of actors and issues. Climate change has been connected to questions of security, development and justice, among other issues. As these issues have reconfigured the discursive space of climate change – and as it has become increasingly apparent that efforts to mitigate climate change by reducing greenhouse gas emissions cannot contain the threat that impacts already in train pose to human life – scholarly and political engagement is no longer directed chiefly at mitigation. Now also receiving significant attention is the idea of adaptation to climate change, which had long been sidelined by the focus on the problem and solutions in terms of greenhouse gas emissions (Watts 2015). This represents in some ways a broader framing of the challenge that climate change poses to human life and an opportunity to explore the meanings that climate change causation, impact and response can hold.

It is now widely acknowledged that international political, policy and regulatory responses to climate change to date have been inadequate, and what constitutes the domain of climate politics has been opened up to scrutiny. In place of a simple narrative of the failure of political will, critical scholarship has suggested that at least part of the problem is that efforts to tackle climate change have been channelled through a single, global framework that has never managed to achieve the consensus on which its success depends, precisely because it circumscribes and curtails the scope of politics (Prins and Rayner 2007; Prins et al. 2010). This approach to climate change has remained distanced from the contexts in which it becomes meaningful to human life and from which an effective politics might emerge (Jasanoff 2010; Hulme 2009).

In light of this stagnation, a wide range of scholars and practitioners are now calling for an integration of the perspectives and engagement of the natural and social sciences, the global and the local, the scientific and the lay (Castree et al. 2014). In line with the critical social theory of recent decades that calls into question the modernist binary of nature and society and the deployments of science and technology that it has made possible, Sheila Jasanoff has argued that, given the need to 'reintegrate global knowing with local meaning' (2010: 246), 'the question today [has become] how to replace the "not-but" dichotomy of systemic versus specific framings with the integrative logic of "both-and"' (238). In more pragmatic terms it is argued that 'we need also to make better use of the broad arsenal of social theory and methodological approaches' of the social sciences to access these local meanings (Agrawal et al. 2012a). The thrust of these calls by critical social science scholars appears, on the face of it, to be in line with parallel developments in global change research, including recent proposals to reframe climate change response as the mandate of the rapidly expanding paradigms of Earth system science and governance (Schellnhuber 1999; Cornell et al. 2012; Biermann 2007). These paradigms, as recent expressions of the ecological systems theory that is foundational in discourses of global environmental response, appeal to the idea of a *system* as a means to achieve the integration that is seen to be necessary to reinvigorate climate change action.

This dissertation analyses one discourse – that of adaptive capacity – which I argue must be understood as the combined effect of many of the discursive shifts that underpin these calls for integration in both the social and the natural sciences. This study, which itself belongs to the critical scholarship briefly introduced here, examines developments within each of these two domains in thinking about human adaptation to environmental change and shows how these developments are frequently responses to the shortcomings and critique of previous approaches, with significant exchange between the two. Based on an analysis of the ideas that come together in the discourse of adaptive capacity, I explore the implications of this call for integration for the biopolitics of climate change adaptation.

## 1.2 The biopolitics of climate change adaptation

Here I describe how a discursive space concerned with the question of adaptation was established with the modern biological conception of life in contingent interaction with its environment. Adaptation has subsequently constituted a central problematic of the biopolitical governance of human populations. The discipline of ecology has influentially theorised the adaptive interaction of life with its environment, offering a concept of the ecological system that in the context of anthropogenic climate change has been extended to encompass the entire Earth, promising with its 'pragmatic holism' to make possible the integration of physical, biological and social perspectives. I introduce my analysis of the discourse of adaptive capacity, which has its foundations in this systems ecological framework, as the dominant mode of biopolitical governance in this context.

### *The 'entry of life into history'*

Many of the bodies of knowledge that have proven integral to biopower, including the medical sciences which form the focus of much of Foucault's own work, are based on biology. In *The Order of Things*, Foucault describes how modern biology was made possible with the emergence of the idea of life. Based on the beginnings of an understanding of organic structure, which consists in the internal relations between elements whose totality performs a function, the concept of life allowed biologists to 'relate the visible, to the invisible, to its deeper cause' (Foucault 2002: 249). They thus could discern the *organisation* that gives the living being its 'coherent totality' and 'ensure[s] order in the living being as opposed to the disorder of inanimate matter' (Jacob 1970: 90). This in turn led to 'the radicalization of the dividing-line between organic and inorganic' or the living and the non-living (Foucault 2002: 252), the former of which could subsequently be understood in new ways as 'that which produces, grows, and reproduces' (252): the living organism.

This distinction between the living and the non-living identified in the organisation of life a 'vital force'. Understood initially as 'a particular quality of matter that composes living beings, a principle spread throughout the body' (Jacob 1970: 39), it was believed that the living organism 'contains [...] a force of formation and

regulation that it communicates to the material of which it is made' (89). Life itself was seen to consist in the organisation that provides this 'force of formation and regulation' that struggles to resist death, manifesting as 'a certain energy necessary to maintain life' (Foucault 2002: 300). As 'nothing other than this principle of struggle against destruction' (Jacob 1970: 90), life amounts to a process of surviving and forestalling death by maintaining functional organisation. These new understandings of the processual nature of this struggle of life, and of the possibility of its extinguishment in death, revealed a '*historicity* proper to life itself; that of its maintenance in its conditions of existence' (Foucault 2002: 300). This sense of the contingency of life, or the absence of determination or necessity in the course of its unfolding, has remained fundamental to how life and its challenges are conceived.

This meant that 'the study of beings could no longer be treated as an extension of the science of things' (Jacob 1970: 89). In the classical age, life had belonged to 'the province of an ontology which dealt in the same way with all material beings' based on a mechanistic understanding of the 'general laws of extensive being'; with the emergence of the discipline of biology 'biological being becomes regional and autonomous' (Foucault 2002: 297). With the view of life in its historicity as radically different from non-life, a discourse of 'vitalism and its attempt to define the specificity of life' would emerge in the early nineteenth century (252). This vitalism, biologist François Jacob argues, is the foundation of modern biology. A tension between mechanist and vitalist accounts of life thus emerged, one that had not existed prior to the end of the eighteenth century. A debate between mechanistic and vitalist approaches to understanding life – the former seeking to extend the laws of Newtonian physics to the domain of biology, and the latter maintaining that living things are animated by a force not reducible to mechanistic explanation – has continued through a considerable part of the subsequent two centuries. Vitalism has been largely laid to rest by developments in molecular biology since the 1930s, but not before it influenced the emergence of a concept of the ecological system that, as I describe below, shapes thinking about adaptation today.

Nineteenth century biology's interest in the functions – digestion, respiration, reproduction and so on – that constitute and sustain life necessitated a concept of

the *environment* as distinct from the organism. In continuing to live, the organism is understood to be engaged in functional interaction with the environment, which provides the conditions for its survival and development. This has enabled the study of the ways in which ‘the organism as the sum of life forces and the environment as the sum of life conditions are in a state of permanent interaction’ (Keulartz 1995: 31) – and laid the foundations for the discipline of ecology, which I discuss below. The idea that the living organism ‘finds itself subjected to a continuous relation with all that surrounds it’ (Foucault 2002: 298) has proven particularly important to a concept of the system that has been central to ecology.

Prior to the late eighteenth century, the prevailing theological worldview and the classical study of natural history had considered ‘the environment [...] the unchanging scenery to which organisms were divinely and forever suited’ (Garvey and Bettinger 2014: 3). ‘Nothing really new ever happened in that history’ (Worster 1994: 138), with the development of living beings occurring only according to a ‘preordained table of possible variations’ (Foucault 2002: 300). The secularisation of time in the modern episteme allowed it to function as ‘a variable independent of the events it marks’ (Fabian 1983: 13) and thus hold a significance in the causation of events. The significance of time for the development of life became apparent in the observations by geologists James Hutton and Charles Lyell that the Earth’s surface was the product of an ongoing interplay of natural forces that had caused the distribution of plants and animals to change over time (Worster 1994; Keulartz 1995). Time, liberated from its role as the medium of a biblical chronology, could then become ‘a way to order an essentially discontinuous and fragmentary geological and paleontological record’ (14). With ‘history restored to the irruptive violence of time’ (Foucault 2002: 144), life is newly conceived as subject to ‘a great temporal current’ (300). Time becomes ‘a principle of the development for living beings in their internal organization’ (164) without which ‘the emergence of anything qualitatively new’ would not be possible (Keulartz 1995: 34). What Fabian refers to as the ‘naturalisation of time’ in the modern episteme was thus essential to make possible the ‘historicisation of life’ and an understanding of the contingency ‘inherent to life struggling to maintain itself’ (Keulartz 1995: 34) mentioned above.

The observation of the changing distribution of plants and animals throughout Earth history and of the close functional interaction of organism and environment – or what Foucault referred to as their ‘unexpected continuity’ – implied that as environments change, so too must organisms if they are to survive. The observation of a ‘marvellous fit’ between organism and environment that had been *assumed* on the theological worldview became an effect of their functional interaction that needed to be *explained* (Levins and Lewontin 1985: 25). Thus emerged the notion of *adaptation*, based on the premise that the environment poses ‘problems’ to which organisms must seek ‘solutions’. The changes that organisms undergo in achieving such ‘solutions’ constitute successful adaptation. The task of the biologist then became to account for the changes, or evolution, that organisms undergo to achieve them.

One such account of evolutionary change that has shaped thinking about adaptation to the present is the theory of evolution by natural selection that Charles Darwin published in the middle of the nineteenth century. Far from the first theory of evolution to have been postulated by that point, Darwin’s theory would prove particularly influential because it included a *mechanism* for evolutionary change: the natural selection by environmental factors of existing variations among individuals of a species engaged in a struggle for survival, variations which are then passed on to make successive generations of the species better adapted to these environmental conditions (Levins and Lewontin 1985). In showing how organisms are acted upon by material forces, this ‘variational’ account differed from existing theories, such as the vitalist and ‘transformational’ theory of Lamarck, which had posited ‘an inner urge’ that drives physiological transformation of individuals within their lifetimes (Levins and Lewontin 1985: 33). It thus appealed to the hope widespread in the nineteenth century of ‘explaining all phenomena of life exclusively in terms of physical and chemical laws’ (Keulartz 1995: 124). Particularly powerful when explaining the divergence of species over long periods of time – an account that would be further strengthened when combined with Mendelian genetics in the ‘New Synthesis’ of the 1930s – it was considerably weaker, however, when it came to explaining ‘the production of anything new’, particularly on shorter time scales. This shortcoming caused doubts from the first reception of the theory (Levins and Lewontin 1985:

37). The question of how exactly adaptation brings about novelty has, as I explain further below, continued to be a central one to discourses of adaptation in ecology and is central to the arguments of this dissertation.

At the time that modern biology established a conception of the adaptation of the organism to its environment as an historical achievement and therefore a phenomenon to be explained, humans had themselves begun to be seen as biological beings. The form of governance Foucault termed biopower emerged in this context, one in which 'life's contingencies [had] become governmental problems' (Grove 2014a: 24) as rulers faced the challenges presented by growing numbers of people to govern and feed as well as the labour needs of expanding economic production throughout the eighteenth century. The technologies of governance devised in response, including advances in agricultural productivity, healthcare and sanitation, depended on, and further drove, the developments in biological knowledge described above. Through this mutual constitution of the knowledge arising from the 'fundamental biological fact that human beings are a species' (Foucault 2007: 1) and the biopolitical technologies of governance of humans as a species, the human collective referred to as a population became an object of analysis and a target of intervention for the first time in Western history (Keulartz 1995: 41). 'Methods of power and knowledge assumed responsibility for the life processes and undertook to control and modify them' (Foucault 2008: 142). A 'space for movement' appeared as 'a relative control over life averted some of the imminent risks of death' posed by the environment, and the 'pressure exerted by the biological on the historical' thus eased (142). The task of biopower is to govern the contingency that is understood to be inherent to life – that is, the historicity and possibility of ceasing to live which arises from life itself, for life contains its own finitude. Thus it governs the contingency of life *through contingency*, that is, by targeting 'the very means by which lifelike properties circulate and propagate' (Dillon 2007a: 12) in adaptive interaction with its environment.

### *The ecological system*

Foucault's work focused on how biopower has developed and operates through the human and medical sciences concerned with the internal metabolism of the

human organism. In subsequent scholarship relatively less attention has been paid to how biopower operates through that other science derived from modern biology: ecology (Keulartz 1995: 15). Interested, in contrast to medicine, in the *external* metabolism of the organism, ecology was originally formulated by Ernst Haeckel in 1866 to theorise the interdependency of species and their environments, following Darwin, as the 'economy of nature' and incorporated other core elements of Darwinian theory such as the logics of efficiency and the competitive struggle for survival (Worster 1994). Work in botany by Eugenius Warming started at the end of the nineteenth century to examine the adaptive effects of functional interaction throughout *whole communities* of plants. This important development 'made it possible to treat biological communities as *organisms of a higher order*, developing just like individual organisms' (Keulartz 1995: 38; emphasis added). Plant, animal and human populations would all be effectively theorised as these 'organisms of a higher order' by the discipline of ecology, and their adaptive outcomes in the 'economy of nature' all examined within a common theoretical framework. Developed 'in imperial contexts and climates', ecology's scope was soon extended from botany to the study of human relations in order to understand and prescribe the ordering of human communities within this economy (Anker 2001: 1), and this saw many metaphors exchanged between the botanical and human worlds, including ideas about colonisation (Luhmann 1989).

Along with the disciplines of anthropology and geography, which were also taking shape in imperial contexts (Bashford 2014; Watts 2016), ecology was initially interested in the study of human, animal and plant communities in terms of progress. Evolutionary theory had positioned humans at the end of the evolutionary story and 'Darwin's allusion to human evolution in the final pages of *On the Origin of Species* had sparked a crusade to classify the world's populations into a developmental scheme' (Garvey and Bettinger 2014: 3), giving rise most notably to the social Darwinism of sociologist Herbert Spencer (Levins and Lewontin 1985). In so doing, these theorists essentially 'redistill[ed] from Darwin's theory [...] those doctrines that were social to begin with' – including the Malthusianism that had informed the competitive struggle for survival mentioned above (Fabian 1983: 12). All three disciplines, in close exchange, played a part in



and were shaped by the debates about human evolution that ensued well into the twentieth century (Watts 2016). Johannes Fabian has argued that anthropology continues, even as evolutionism has later been rejected, to rest on a powerful, implicit 'temporal slope' that makes epistemologically possible concepts such as evolution, development, and tradition (1983: 17) – and the same can be said of geography and ecology, even though they have also featured schools of ahistorical, synchronic analysis. These efforts to understand the engagement of different groups of people with their environments, and to place these modes of engagement within a history of human evolution, have informed the biopolitical governance of populations in diverse colonial contexts. They have also given rise to perspectives, implicit and explicit, about the capacity of different people to adapt to environmental change – views that are now resurfacing in the context of climate change.

Within ecology, a particularly significant attempt to theorise the adaptive evolution of biological communities is the 'climax' theory of Frederic Clements, which views plant communities as 'super-organisms' that evolve through 'well-ordered succession' as waves of plants 'invade' and 'colonize' an area (Keulartz 1995: 144). Clements' theory was *holistic* in the way that it incorporated both organic and inorganic parts of a biological community as equally analogous to the parts of an organism. In this, it resembled the 'idealistic ecology' of General Jan Smuts, architect of South African Apartheid (Anker 2001: 41). Smuts famously viewed evolution as a progression of more complex and significant 'wholes' – which he took to account for a hierarchy of human races – and advanced a vision in which these 'wholes' would be incorporated into the greater whole of an international system of states characterised by 'unity through diversity' (Anker 2001; Bashford 2014). In something of a backlash against the mechanist theoretical programmes of the nineteenth century, this holism held appeal in the early twentieth century because it was seen to 'retain the anti-mechanist impulse of vitalism without recourse to some obscure life force' (Keulartz 1995: 125). This made possible a view of adaptation as the achievement of a greater order through the interaction of the parts of the whole, within which different groups of humans each take their proper place. But 'with its central premise that the whole is

greater than the sum of its parts, and the individual subordinate to the collective, holism pandered to the anti-liberal sentiments that were rife in the 1930s' (125).

Ecology took a turn away from this holism especially as some of its political implications were becoming more apparent in the lead up to the Second World War. Arthur Tansley, taking issue with the organicism of Clements' work, maintained that 'all living organisms may be regarded as machines transforming energy from one form to another' (Tansley 1922 cited in Anker 2001: 30). This was a perspective that was only newly becoming tenable from the point of view of modern physics. Physicists had struggled in the nineteenth century with 'the peculiar power of living systems that enables them to resist the second law' of thermodynamics (Keller 1996: 46). This law holds that entropy in an isolated system may only stay the same or increase, and may *not* decrease, as the system evolves towards thermodynamic equilibrium or maximum entropy. Life appeared to represent an exception, for entropy is in fact decreased when living organisms take in oxygen, water and food and thereby grow and develop. The perceived capacity of life to defy the second law had demonstrated, in the vitalist view, a kind of will or 'purposeful tendency' that 'seem[s] inexplicable by natural selection or any other existing mechanistic hypothesis' (Henderson 1913: 292).

The application of the concept of the *system* to the adaptive relationship of organism and environment unites the two in such a way as to bypass the tension between mechanism and vitalism. In the early twentieth century it was found that the problem of the discontinuity between the mechanism of physical systems and the apparent vitalism of living organisms would seem to disappear if 'one *redraws the boundary of the living system*, not at the outer skin of the organism but at the outer perimeter of the closed thermodynamic system... such a redefinition of the system served simultaneously to restore harmony between biology and physics and to evade the ever more discrediting charge of vitalism' (Keller 1996: 64; emphasis added). Thus a rapprochement of sorts was reached in the form of the model of the open thermodynamic system as applied independently in Vernadsky's theory of the 'biosphere' and by Ludwig von Bertalanffy in biology (Bryant 2009; Keulartz 1995). This system containing organism and environment, which Tansley called an 'ecosystem', was seen to overcome the tension by 'represent[ing] nature in terms of physico-chemical wholes encompassing both

living and non-living matter' (Bryant 2009: 44). This concept formed the foundation for the mid-century paradigm of systems ecology, which sought to understand how systems operate to achieve what was assumed to be an optimal and default state of functional equilibrium akin to that of the archetypal closed mechanical system, the steam engine.

In fact, as Bryant points out, the concept of the system 'did not reconcile mechanism to vitalism but leapt over the problematic altogether [... by] encompassing formerly conflicting elements together within a new entity, the system, which functioned according to a more fundamental set of principles' (Bryant 2009: 269; emphasis removed). In positing this unified entity, the concept of the system depends on a holism no less than do Clements' 'super-organisms', but this holism was considered different. Von Bertalanffy referred to it as 'pragmatic' in contrast to the 'philosophical' holism of Clements and Smuts (Keulartz 1995). The 'pragmatic' study of systems sought to explain, and incorporate, what was seen as unique to life – the possibility of self-generating complexity and development in living organisms – in the terms of the physical system, terms that are ultimately 'materialist, empirical and grounded in quantification' (Bryant 2009: 32). This has formed the foundation of understandings of the adaptation of the ecological system, and in turn the modes of biopolitical governance, that appear in the contemporary context of climate change adaptation.

To theorise the functioning of the system, ecology drew on cybernetics, the 'science of control and communication in animals and machines' (Wiener 1961), which at this time was developing a concept of a system that would apply equally to animate and inanimate systems. If, through cybernetics, life was being equated with the homeostatic circulation of information on the one hand, information systems were also being attributed life-like properties on the other. Physicists and engineers were 'actively importing' from developmental biology the 'pre-molecular (organicist) preoccupations' of purpose, organisation and harmony to the language of cyberscience (Keller 1996: 89) to help them develop models of 'self-steering, target-seeking' systems (91). Most important among these concepts was organisation – the capacity which was, as I described above, seen as inherent to life as that which makes it *live*, and therefore the foundation for purpose,

harmony or anything else that might be attributed to a living thing, including the potential for adaptation. In both organic and inorganic systems this organisation was then theorised as consisting of ‘interactive behaviour based on circular feedback’ (91). The interactive behaviour of human communities as human systems was studied from the middle of the century in the fields of cultural ecology and ecological anthropology – where it was examined in terms of the difference ascribed to the non-Western societies that were still the focus of these disciplines – as well as taken up further afield, such as in Niklas Luhmann’s theory of social systems.

The concept of the system has since been further developed through an ongoing exchange between the biological and the information sciences. This exchange has seen ‘a series of *movements back and forth across the machine-living organism border*’, resulting in a ‘blurring, discursively and materially, of distinctions between mechanical and biological systems’ (Fujimura 2011: 65; emphasis added). With the molecular and digital revolutions, the category of living things has been extended beyond that associated with modern biology in Foucault’s account to include ‘forms of living being that radically transcend ontological distinctions between animate and inanimate matter’ (Dillon and Lobo-Guerrero 2009: 15). In addition, developments in the physics of non-equilibrium thermodynamics, seeking to understand non-linear dynamics beyond the realm of Newtonian mechanics, have shown how the apparently second law-defying development of life occurs through self-organisation made possible by what are termed ‘dissipative structures’. These developments have informed a contemporary ‘view of life understood as a living and *complex adaptive system* characterised by self-organisation, non-linear combinatorial transactions and radical contingency’ (Watts 2015: 40; emphasis added).

All of this has shaped ecology’s continuing attempt to understand how living organisms interact with their environments and achieve adaptation to changes in these environments. Having moved away from its mid-century faith in equilibrium, a ‘new’ ecology is now concerned primarily with questions of adaptation, reflecting a reinvigorated interest in process, change and evolution in various related disciplines towards the end of the last century (Head 2007; Zimmerer 1994). Ecology thinks of itself now more than ever as a ‘science of the

*integration of the parts*’ in contrast to the traditional ‘science[s] of the parts’ (Holling et al. 2000; emphasis added). Humans are incorporated into an expanded concept of the system as a ‘coupled social-ecological system’. As theorists are at pains to make clear, this involves an ‘integrated concept of humans-in-nature’ (Berkes and Folke 1998) rather than simply ‘social systems plus ecological systems’ (Westley et al. 2002), and neither should either dimension be reduced to a ‘prefix’ (Berkes and Folke 1998). Through these shifts the concept of the system has remained, I argue, a site of attempted reconciliation of the physical and the biological, its ‘pragmatic holism’ working to manage and contain an underlying tension between the mechanist and vitalist elements it has brought together. In light of the shifts in physics, biology, and cybernetics outlined above, this tension has taken different forms since the debate between Tansley and Clements and has led to various conceptual revisions. Having moved away from its origins, the theory of social-ecological systems now sets out to ‘portray systems not as deterministic, predictable and mechanistic but as process-dependent organic ones’ (Folke 2006: 257). With the explicit inclusion of people in the social-ecological system, this tension is further complicated by the need to accommodate what is different about the social world and the additional senses in which the social is thought to be characterised by a historical contingency beyond that of the biological. It has caused further ‘blurring’ of the kind Joan Fujimura, cited above, and other scholars of Science and Technology Studies have explored. In the current, enthusiastic vision of the social-ecological system and its emphasis on an integration of the social and the ecological parts – and of the disciplinary perspectives required to understand the parts – the ‘pragmatic’ holism of the theory is now shaping the emerging biopolitics of climate change adaptation.

#### *The discourse of adaptive capacity*

The ecological understanding of the system pervades discourses of anthropogenic climate change impact and response. It has been extended to encompass the entire Earth, forming the basis for the interdisciplinary fields of Earth system science and its corollary Earth system governance. Earth system science, which understands the Earth as a complex system composed of the subsystems of the geosphere, atmosphere, biosphere, and so on, is ‘emerging as a holistic super-

discipline that tries to embrace all processes in nature and society as one interlinked system' (Lövbrand et al. 2009: 7). Earth system governance embodies a hope that this science can provide humans with a 'manual of minimum safety standards' for life in the Earth system (Schellnhuber 1999: 23). The science is, however, currently generating an understanding of climate change and other dynamics in the Earth system as more complex, dynamic and non-linear – more *contingent* – than previously understood, which is rapidly altering thinking about how to live through these dynamics in this system.

In its concern to better understand and thereby offer solutions to the difficulties of sustaining life on Earth, this expanded conception of the social-ecological system continues to reflect the 'pragmatic holism' with which the concept of the ecological system was originally conceived. This conception of the system underpins what is, I argue in this dissertation, the discourse that holds together various key elements of current thinking about adaptation: that of adaptive capacity. This discourse is how biopower operates in the context of climate change adaptation. It represents an attempt to confront the contingency in the Earth system with a programme for the governance of the social-ecological system.

Scholars of biopolitics, in the disciplines of international relations, human geography and development studies in particular, have examined the discourse of the complex adaptive system as it has been mobilised in the governance of the security and development of human life (including Anderson 2010; Walker and Cooper 2011; Reid 2013; Evans and Reid 2014; Dillon and Lobo-Guerrero 2009; Dillon 2007a; Duffield 2007a). They have observed a move beyond more traditional forms of risk management and the growing role of modes of governing through contingency in response to various threats, among them climate change. Most of the literature on climate change has focused on how constructions of climate change as a threat to human life have shaped efforts to mitigate, or prevent, it by reducing greenhouse gas emissions (incl. Dalby 2013; Oels 2005; Oels 2013a; Oels 2013b; Methmann 2011; Methmann and Rothe 2012). However, as Michael Watts (2015) and Kevin Grove (2014b) have pointed out, little work has been done to date on adaptation to climate change impacts that theorises it a site of biopower (but see Grove 2014b; 2014c) – an absence that this study seeks

to address. In doing so, this study contributes to the biopolitical scholarship on climate change, and is positioned at the interface of engagement with this field in the disciplines of human geography and STS.

An analysis of adaptation governance as biopolitics is a means to understand how the discourse of adaptive capacity of the social-ecological system has developed, as outlined here, since its origins in ecological conceptions of the interaction of organism and environment. As I explore throughout this dissertation, this discourse has been further shaped by conceptual developments and debates within both the natural and the social sciences as it has emerged in the climate change adaptation context. This genealogical analysis of the lines of thought evident in this discourse allows an understanding of what is at stake when these concepts are mobilised in the governance of human communities in the present. As is already evident in the background discussion above, the ideas that constitute the concept of the social-ecological system come inscribed with a variety of implicit and explicit political commitments that had already generated much heated debate before they even entered the arena of climate change. The rationale for this research is that an understanding of these political commitments, which I believe is only possible through the kind of close analysis undertaken here, can inform the direction of further research and policy.

In this dissertation I examine how the discourse of adaptive capacity appears in the context of one particular group of people, the Aboriginal and Torres Strait Islander peoples of Australia – a population that has of course already experienced damaging effects of various paradigms of governance ranging from well-meaning but misguided to more deliberately pernicious. Australia's Indigenous peoples are, like other indigenous peoples around the world, widely represented to be *both* particularly vulnerable *and* resilient in the face of anthropogenic climate change. I explain how these paradoxical representations have been made possible through shifting thought about what it means for Indigenous peoples to be vulnerable to, and to adapt to, the impacts of climate change. These representations are the product of the encounter between ideas that originate in international climate change research and governance and some of the discourses that define Aboriginal and Torres Strait Islander community policy and politics, including caring for country, community, self-determination

and indigeneity itself. Through this encounter, Indigenous communities on country have come to be understood as social-ecological systems with an adaptive capacity derived from their internal organisation, one that enables them to effect adaptive change in order to survive environmental change.

My analysis shows that the discourse of adaptive capacity is shaped by the dynamics of the different perspectives brought together in the concept of the social-ecological system as well as the various debates and developments in thinking about adaptation in the context of climate change. I argue in particular that the discourse of adaptive capacity is defined by the tension, introduced above, between the vitalist and mechanist thrusts of the concept of the social-ecological system. This tension manifests as an ambivalence about what exactly drives adaptive change. This ambivalence arises from the multiple discursive layers 'integrated' within the idea of adaptation in the social-ecological system. At base it is understood to be an automatic and necessary process that occurs as environmental forces act on organisms that are essentially mechanical systems, as was implied by Darwin's variational account of evolution. At the same time, however, adaptation is also seen as a contingent process shaped from within the living system by the source of the 'vital force' that allows it to develop – its organisation – in keeping with a transformational account of evolution. And, finally, when this system is a human one, adaptation is a process driven by an agency that, if theorised at all, is explained as being a special bonus product of the evolution of human consciousness. The discourse of adaptive capacity increasingly defers to this sense of human agency in order to account for the kinds of transformative adaptive change within the system that are required to meet the challenges of a radically changing Earth system – and in doing so offering a very different account of adaptive change to Darwin's, which had struggled to account for novelty. All these understandings of adaptation coexist within the discourse of adaptive capacity and, as my analysis shows, are drawn upon interchangeably and frequently in confused and contradictory ways.

Adaptation in Indigenous communities is governed through the discourse of the adaptive capacity of the social-ecological system and the contingency made possible by the system's organisation or agency. As a form of what Foucault terms governmentality, this discourse contains rationalities of government, or political



rationalities, that reflect perspectives on the nature of the task of adaptation and how it should be undertaken. This governmentality enlists Indigenous communities to actively engage with the task of adaptive change in particular ways. Much of the biopolitical literature mentioned above has claimed that biopower requires subjects to prepare for, accept and endure the contingencies of the contemporary world – a mode of governance referred to in this literature as preparedness. My analysis suggests that, in fact, while preparedness is one part of current climate change adaptation governance, the adaptive subject is increasingly also governed through a discourse of transformative adaptation that exhorts it to change itself and its environment, denying any limit to its agency to bring about change of any kind it desires. Slippage between these roles prescribed for the adaptive subject – alternately as objects or subjects of environmental change – is an effect of the ambivalence, and ultimately the tension between mechanism and vitalism, that is embedded within the discourse of adaptive capacity.

What is problematic about the ambivalence is not so much that it exists *per se*, but rather that it has political effects that go unacknowledged. Systems theory's commitment to integration, not to mention unity, means that perspectives that in fact challenge one another have been shoehorned into a single perspective – a move that is of course itself political. This means that this discourse can be deployed to various and conflicting ends – invoking political agency in one moment and curtailing it in the next, for example – depending on the interests at play at the site at which it appears. This means that Indigenous community agency and autonomy in the context of the settler Australian state, which are already hard-won and tenuous achievements, are made all the more precarious by the discourse of adaptive capacity.

### **1.3 Chapter outline**

The following chapter examines in greater detail Foucault's account of biopower, and how power and knowledge are intertwined in the discourses that give rise to this mode of governance. I explain how these discourses construct the task of adaptation, and the subjects that are to undertake it. I introduce Foucault's discussion of 'race war' as an account of how historical discourses such as that of

indigeneity pose a challenge to the naturalisation effected by dominant scientific discourses, and argue that this offers a framework to understand the tension between historical and more biological readings of Indigenous adaptive capacity. This chapter then describes the methods employed to analyse these discourses, arguing that a genealogical approach provides a means to make sense of this interplay of discourses. I also introduce the texts that I have drawn upon in developing the arguments presented in the subsequent chapters, which include a corpus of documents by Indigenous organisations, government and the climate change research community.

In Chapter 3 I provide an overview of how adaptation thinking has been revised and extended through the intervention of critical perspectives from both the natural and social sciences, and through and in the context of traffic between the social and natural sciences. This chapter serves to review the relevant literatures and forms a foundation for the arguments I advance in the dissertation. I set out my interpretation of the broad shifts that discourses of human adaptation to environmental change have undergone since they first appeared in mid-twentieth century ecology and anthropology and have been subsequently further developed in the context of climate change. After having been largely disregarded in climate change research and governance on the grounds that adaptation occurs automatically and need not be governed, adaptation has been promoted through paradigms of technocratic risk management, community development and, most recently, a 'turn to capacity' (Eakin 2014). This last shift has seen research and practice come to focus for the time being on the idea of adaptive capacity, which is treated as both the means and end of adaptation.

Chapter 4 begins to present my analysis of a corpus of texts related specifically to adaptation in Indigenous Australian communities. It outlines how representations of Indigenous vulnerability and adaptive capacity have shifted in line with the broad discourses in the international context, but with specific meanings and implications associated with how these international discourses have been received and integrated into existing discourses in the Australian Indigenous context. The first articulations of the need for adaptation in these communities emphasised that Aboriginal and Torres Strait Islander peoples tend to be more vulnerable than other Australians where they can be said to face issues of socio-

economic disadvantage and political marginalisation. Existing alongside these ideas about vulnerability, however, is a contrasting popular representation that attributes to indigenous peoples a unique, inherent adaptive capacity, as evidenced through their survival of thousands of years of environmental change as well as colonisation. These contrasting representations are effects of the ambivalence about what it means to be vulnerable and to adapt to environmental change that I introduced above. The discourse of a unique Indigenous adaptive capacity has come to dominate this policy space, however, and with it a framing of indigeneity in terms of an inherent identity that reflects a naturalisation that is an effect of the biological foundations of the theory of the social-ecological system. As I show throughout the rest of the dissertation, it forms the basis of an approach that envisages Indigenous communities caring for country as an expression of the adaptive capacity of the social-ecological system, and precludes the kinds of claims that might be made by Indigenous communities on the basis of a discourse of vulnerability.

The following chapters explore different dimensions of the discourse of Indigenous adaptive capacity. Chapter 5 describes in more detail the vision for adaptation that builds on and leverages the Indigenous idea of country and community aspirations associated with it, finding in it a mirror of the holistic logic of the theory of the social-ecological system. In the discourse of adaptive capacity, it is the connections or relations among the elements of the social-ecological system – in this case, the Indigenous community caring for country – that are seen to enable it to adapt. This is the basis of a biopolitical rationality that takes the community as a whole as the subject of adaptation in Indigenous Australia. I show how this emphasis on relations is derived from theories of the living system that identify the *organisation* of the system, as distinct from the structure or form it may assume at any given time, as that which allows it to persist or survive. The importance of organisation, implicit within the concept of the system, appears here as the idea that adaptive capacity is part of the identity of the system that endures through superficial structural changes. In the context of social-ecological systems it figures as a kind of agency to engage in adaptive change that in the Indigenous case is understood to consist in the dynamic relations of country more than any specific traditional practices or knowledges.

It is important in this discourse that adaptive capacity does not consist in fixed content because, as I show in Chapter 6, transformative adaptation in the face of non-linear change in the Earth system requires subjects to draw strategically from existing knowledge and experience, but also to learn and adopt new knowledges and practices that may prove more suitable in changed circumstances. A dexterity in this constant negotiation of the old and the new for survival – something that Indigenous peoples are seen to have expertly demonstrated in the past – is a core part of the discourse of Indigenous adaptive capacity. However, the implicit circularity of the logic of interaction in the system has long impeded efforts in systems theory to explain evolution and novelty. Based on revisions to the theory of the organisation of the system, human agency and a capacity to deliberately engage in adaptive learning is explicitly invoked to explain how adaptive change is possible. This constitutes a biopolitical rationality that acknowledges and governs in terms of the idea that some kinds of change are possible only through human agency. The emptiness of this understanding of transformative adaptation is evident, however, in the limits of this agency to bring about change in the absence of any external support. These limits are acknowledged and provisions made, in the form of an enabling environment, to ensure adaptation occurs where the means or the will are otherwise lacking.

In Chapter 7 I explore the role of the enabling environment in the discourse of adaptive capacity. The enabling environment is seen to support communities to achieve their own self-directed adaptive vision, and in this sense it responds to arguments by Indigenous community leaders that self-determination does not mean complete self-sufficiency but rather must involve government assistance. In this sense it is an explicit articulation of a political rationality that prescribes an active role for both communities and government. With the idea of the enabling environment, the concept of the social-ecological system is expanded outwards to encompass the multiple levels that are acknowledged to be necessary to functioning of the system. While addressing the problem of explaining the impetus or means for change in the system that I examined in the previous chapter, this move narrows the kinds of change possible – or rather reveals a narrowness that is implicit in the logic of the system. This is because the dynamics of transformative change in the social-ecological system are defined by logics of

economism and flexibility derived from their theoretical roots in evolutionary biology. These logics privilege the interests of the whole system, which are taken to be simply survival in the most efficient and flexible manner possible, discounting the interests of a small individual part such as the Indigenous community. Thus, far from introducing a politics into the concept of the system by accounting for governance and material support for the local community, the enabling environment precludes political claims on the state by effectively assuming the interests of the community to be synonymous with those of the wider system of which it is a part.

The analysis in Chapters 6 and 7 shows how the ambivalence around what drives adaptive change in the social-ecological system plays out through different aspects of Indigenous adaptation. In each case there are attempts to resolve or settle a tension in different understandings of what is required for change by revising elements of the systems theoretical basis of the social-ecological system. Together these represent a revised political rationality that translates into the biopolitical application of the theory of the social-ecological system. These revisions represent, I argue, an implicit acknowledgement of the need to account for the politics of adaptation in ways that are in line with the demands made by communities. But in each case the resolutions offered by the discourse of adaptive capacity serve only to extend and consolidate the reach and hold of the logics of the system. In Chapter 8 I develop this argument by looking further at the implications of the logic of 'pragmatic holism' that is inscribed in the concept of the social-ecological system, a holism that seeks the integration into the whole of a plurality of parts – not unlike the 'unity through diversity' that General Smuts envisaged for South Africa and the world. This chapter explores how the integrative logic of the discourse of adaptive capacity appears to open up the politics of climate change knowledge and response, representing a rationality that emphasises the importance of a reflexive politics. I argue that in fact, in continuing to prescribe the terms of the engagement of the adaptive Indigenous subject, it ultimately shuts down the potential of such politics.

Chapter 9 concludes the dissertation with a review of the arguments set out in the preceding chapters, summarising the picture of the adaptive Indigenous subject

formed by the discourse of adaptive capacity and outlining the implications that this discourse may hold for Aboriginal and Torres Strait Islander communities.

#### **1.4 Contribution and significance**

An analysis of human adaptation to climate change as a site of biopower has both substantive and methodological value in answering the research questions that guide this study: the questions of the nature and origins of the logics that constitute the discourse of adaptive capacity, and how these logics construct the adaptive Indigenous subject. Its substantive value is that it allows the current discourses that underpin adaptation research and governance to be situated in a longer, but specific, discursive history that began with the birth of modern biology. This is the basis of my argument that climate change adaptation governance is best understood as operating on and through life itself – that is, through the capacity of life to sustain life. This is an idea that has not yet been explored substantially in the existing biopolitical scholarship. The understanding of adaptation as a site of biopower offers a methodological foundation for the examination of the ecological and other forms of knowledge about adaptation, and the forms of governance that they make possible, as inseparable. This allows analysis of the ways that various conceptual developments in the natural and social sciences have both directly and indirectly informed the political rationalities evident in the governance of climate change, as well as how the challenges of responding to environmental change have in turn prompted new ways of theorising adaptation.

This attention to discourses of adaptation is important at a time when the understanding of the place of humans within the Earth system that forms its foundation is also influencing wider shifts in thinking about the environment. On the basis of growing appreciation of the scale of human impacts on the Earth and the unprecedented impacts that the changing Earth system is having on human life, the concept of the Anthropocene is employed in scholarship in both the natural and the social sciences to refer to a distinct epoch in geological time marked by anthropogenic influence. It is seen by many as a useful way to think about human and natural agency and the relationship between the two. While the literature on the Anthropocene includes consideration of many of the themes

central to this study, such as the idea of humans as a species, evolution, and survival, I do not engage with the idea of the Anthropocene *per se*. I see it as being, in some senses, another effect of the same developments in Earth system science that have driven many of the discursive shifts that I examine here. My contribution in the context of these broader debates is to document how these developments originating in systems ecology have fed directly into discourses of human adaptation to environmental change.

In the context of this new thinking about the agency of humans and of the Earth, recent work has begun to augment Foucauldian notions of biopower – which have tended to centre on the biological sciences – with accounts of agency written in dialogue with the geological and earth sciences. Kathryn Yusoff has argued, for example, that biopolitics is increasingly subtended by geology (2015), and Elizabeth Povinelli that biopower, which is concerned with the binary of life and death, in fact rests on a more fundamental, ‘geontological’ distinction between life and nonlife, and is now giving way to ‘geontopower’ (2016). The emerging ‘post-life’ critique that Povinelli points to, even while questioning and relocating the boundary between ‘life’ and ‘non-life’, still engages however with what has traditionally been attributed to living beings and which might now be understood to be distributed more widely. Exploring similar themes, my analysis of the concept of the social-ecological system as a compound of animate and inanimate elements examines how this concept is constructed in more or less lively terms, and mobilised to different political ends. I argue that the Indigenous community, represented as one such compound when cast as a social-ecological system, is governed through the capacity of life to sustain itself. This governance can, I argue, be helpfully positioned and analysed within the trajectory of an expanded understanding of biopower.

My analysis of the discursive shifts that have led to the discourse of adaptive capacity reveals that in various ways this discourse is a product of attempts to respond to critique from within the social sciences of prevailing approaches to addressing climate change. This includes attempts to incorporate some of the themes raised by critical commentary, including those of human choice, meaning and agency, as I have outlined in this chapter. This analysis shows that adaptation discourses, although dominated at present by a systems logic that seems to

maintain a fundamental commitment to physical explanation, can be seen to have been grasping for that thing which drives human action and can give life to their concepts. This is in order to allow for that which politics provides: the possibility for things to become otherwise. The effect of the pragmatic integrative logic of the social-ecological system as it seeks to incorporate the potential for political contingency is, however, to foreclose a meaningful politics in the several ways that I explore in the following chapters.



## **Chapter 2: Analysing the discursive construction of the adaptive Indigenous subject**

This chapter introduces my approach to the analysis of the ways in which climate change adaptation is governed in Indigenous Australia. Drawing on Foucault's work on governmentality as a mode of governance that extends far beyond and below the activities of the state, this dissertation examines the ways in which this governance occurs through the discursive construction of the imperative of adaptation, the adaptive Indigenous subject, and the options available to this subject. An analysis of the discourses at play at this site of governmentality allows an exploration of the political implications of these constructions, which consist of both opportunities and constraints that are emerging for Aboriginal and Torres Strait Islander communities in the context of climate change adaptation. While Foucault has been accused of neglecting the issues of both the environment and colonialism<sup>1</sup>, I argue here that both the research framework he devised with his discourse analysis of governmentality, as well as some of his substantive insights, particularly those about biopower and race, offer a rich foundation for my analysis.

In the first section I examine Foucault's account of the interplay of power and knowledge in discourses that construct the subjects of governmentality. I discuss the role of the biological knowledges in the biopolitical governance of human life and how a current mode of governmentality operates on and through the contingency of the complex adaptive system. In the second section I turn to Foucault's account of 'race war' to argue that the discourse of Indigenous adaptive capacity can be seen as derived from an historical discourse of

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<sup>1</sup> See e.g. Darier 1999 on perceptions of Foucault's disinterest in the environment and Said 1986, Young 2001 and Stoler 1995 on his engagement with colonialism.

indigeneity that is being naturalised in the ecological terms of the system. The final sections introduce the method of genealogy as a means to recover this history, and describe how I apply this method to my analysis of the discourse of Indigenous adaptive capacity.

## **2.1 Governmentality and its subjects**

According to Foucault the development of biopolitical modes of governance that emerged in the eighteenth century augmented and reconfigured the existing forms of governance he terms sovereignty and discipline into a new formation of government. As I describe in this section, this governmental formation operates through a form of power that, inseparable from systems of knowledge, governs its subjects through the ways that they know themselves, the world, and the fields of possibilities that are available to them.

### *Power and knowledge*

From the eighteenth century government came to be understood, according to Foucault, as the maintenance of *'the right disposition of things'* (1991: 93; emphasis added). It is the governance of people, in their individual and collective conduct, and in relation to all manner of things: 'wealth, resources, means of subsistence, territory with its specific qualities; [...] customs, habits, ways of thinking and acting; [...] accidents and misfortunes such as famine, epidemics, death' (93). This differed from previous conceptions of power in that both the ends and means of this government are defined in terms immanent to life. Where the end of sovereign power exercised by rulers through the law was 'nothing other than submission to sovereignty' (Foucault 1991a: 95), government employs a range of techniques of power to 'invest life through and through' (2008: 139) in the pursuit of not any single end but multiple and varied objectives, each concerned with the optimisation of the relations of people and things (1991). In addition to the judicial force retained from feudal sovereignty, government consists of the techniques of the discipline of individuals – or 'the administration of bodies' – being developed in state institutions such as prisons in the seventeenth and eighteenth centuries. Added to these forms of power with the emergence of biopower were the techniques of regulation dedicated to 'the calculated management of life' (2008: 140). Through these forms of power the

government of people and things, as an 'ensemble [of] institutions, procedures, analyses and reflections', operates at multiple levels and in multiple ways (1991: 102). I argue in this dissertation that the governance of climate change adaptation is best viewed as one such ensemble of government oriented towards the achievement of adaptation of human life to its environment as 'the right disposition of things'.

Government in this sense encompasses a range of processes and activities 'aiming to shape, guide or affect the conduct of some person or persons' – or the 'conduct of conduct' (Gordon 1991: 2). With the mobilisation of disciplinary and biological power through 'techniques of power present at every level of the social body and utilized by very diverse institutions' from the police to education system, a governmentality came into being that takes power to be neither derived from nor coextensive with the state (Foucault 1982: 793). It is nevertheless one that refers to power relations that have become increasing 'elaborated, rationalized, and centralized in the form of, or under the auspices of, state institutions' (Foucault 1982: 793). Thomas Lemke observes that Foucault's study of governmentality and biopower is driven by an interest in precisely how 'power relations historically could concentrate on the state without ever being reducible to it' (2002: 58).

Viewed in this way as an activity or practice rather than an institution, government can be seen to be underpinned by 'a rationally reflected way of doing things that functions as [its] principle and method' (Burchell 1996: 21). In this sense government constitutes a particular 'rationality' or 'mentality' of rule, or what Foucault refers to as *governmentality*, which is a 'way or system of thinking about the nature and practice of government' (Gordon 1991: 3). This rationality consists of reflections upon 'who can govern; what governing is; what or who is governed' that together make government 'thinkable and practicable both to its practitioners and to those upon whom it [is] practiced' (Gordon 1991: 3). It is a vision, in other words, of 'the proper spheres of action of different types of authority' for managing life (Rose 1993: 288). Not characterised by 'a coherence of origin or singular essence' (Rose 1999: 276), such rationalities can be discerned in both implicit and explicit expressions and articulations of the nature and object of governance in specific sites. I am interested in how the discourse of adaptive capacity, analysed here as a site of governmentality, evidences specific and

indeed often explicit reflections on – and attempts to reconfigure – the practice of government in the context of climate change adaptation.

The power at play in governmentality does not work through coercion and domination as sovereign power does. Power is better understood not as a force that only destroys or limits, Foucault maintains, but rather more broadly and more fundamentally as that which *produces* the world and the possibilities available to its subjects (2008). Dependent for its success on its deployment ‘according to procedures, instruments, means and objectives which can be validated in more or less coherent systems of knowledge’ (Foucault 1997: 52-53), power is necessarily connected with knowledge within what Foucault calls *discourses*. These are systems of meaningful representation consisting of both language and practice that, as both a medium and an effect of power (2008: 101), produce both ‘the subject who knows... and the objects to be known’ (Foucault 1977: 28).<sup>2</sup> Discourses in turn constitute governmentality, making government ‘thinkable and practicable’ (Gordon 1991: 3). Each instance of governmentality is defined by implicit or explicit conceptions of who or what is to be governed, as well as why, how and to what ends they are to be governed (Rose, O'Malley and Valverde 2006), and through discourse governmentality can be said to *construct* that which it governs. The discourses that constitute ways of knowing and approaching the idea of climate change impacts as a threat to human life can therefore be said to construct the imperative of adaptation and the subjects who are to engage in it.

The inseparability of power and knowledge in the poststructuralist thought of Foucault and others is of course very different from how the relationship of the two have typically been viewed in the Western world. This is a ‘tradition that allows us to imagine that knowledge can exist only where power relations are suspended’ (Foucault 1977: 27) and that it ‘is truly knowledge when it is answerable only to truth’. In the realm of politics or the public sphere, on the other hand, far away from the ‘contemplative disinterest’ of the philosopher, the truth is a ‘matter of indifference’ to the efficacy of power (Allen 2010: 152). This

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<sup>2</sup> To say that discourse constitutes reality is not to say, however, that the world lacks material existence. It is rather to say that it lacks *meaning* outside of discourse (Foucault 1972: 32; Laclau and Mouffe 1985).

view was consolidated with the birth of the modern episteme – that is, the bodies of knowledge and ways of knowing that began to emerge towards the end of the eighteenth century (Foucault 2002). This period saw the elevation of the natural sciences, through the distinctions and hierarchies established with the proliferation of disciplines of knowledge in this period (Foucault 2003), to the peak of authority. The modern sciences are characterised, Foucault argues in *The Order of Things*, by the assumption of an autonomy or independence of the object of analysis from the concepts of analysis (177), which positions the scientist at an objective distance from which to study what inheres in the object, including the ‘hidden’ laws that cause it to be the way that it is. This distinguished a scientific, or ‘philosophical’, knowledge that is independent of place and time from knowledge that is, and concerns the realm of the, historical (2002: 61).

Governmentality draws on the authority of knowledge as problems of governance are increasingly submitted to expert analysis, effectively putting knowledge to the explicitly political ends of governance while the two are *represented* as independent of one another. This is a move that is political in itself. The political weight of the natural sciences in particular, in purporting to present an objective and neutral picture of the world, is all the greater for its capacity to *naturalise* itself and its objects – that is, to present them as existing independently and adhering necessarily to the natural laws that govern them. This observation has been made by many scholars of Science and Technology Studies, whose starting point is that science is socially produced – or ‘made rather than found’ (Bijker et al. 2009: 29) – and who have shown how science derives its authority from careful ‘boundary work’ through which it distinguishes itself from non-scientific knowledge (Gieryn 1983; 1995). On the basis of this authority, science in turn produces and is produced by – or ‘coproduces’ – social worlds (Jasanoff 2004).

This has a particular significance when the natural scientific discipline of biology and the array of disciplines derived from it – including medicine, psychiatry, and ecology – are directed towards the biopolitical governance of *people*. The broad understanding of life offered by avenues of research in the modern biological sciences – characterised as it is by a kind of ‘vitalism’ and a recognition of the historicity or contingency inherent and unique to life itself (Jacob 1970; Foucault 2002) – was a perspective that to some extent ran against the grain of the

mechanist programme of nineteenth century physics, as I described in Chapter 1. Biopower, which rests on – and as I describe further below, governs through – this new understanding of life as contingent, seeks to understand and to manage the conditions, challenges and dangers that, in shaping its unpredictable course, underpin the contingency of life. However, when applied to people, the biological conception of life encounters a tension from the other direction, for this conception is above all a *natural* one. This means that biology takes human life to be observable and knowable in the same ways as other phenomena of the natural world and can thus only see what is observable in the same way as those other phenomena. This erases much of what shapes the human social and political world, the analysis of which is instead delegated to the social ‘sciences’ and humanities.

This naturalisation of human life by the biological disciplines therefore elides another kind of contingency that characterises human life. This is the sense of the historical that is demarcated and excluded from the modern sciences, which insists that history unfolds ‘not because it had to, but just because it did, because at certain junctures it took one path as opposed to another’ (May 2006: 15), and the analysis of the political that might explain exactly why one path was taken instead of another. The naturalisation of human life by the biological sciences, Foucault argues, has thus given rise to the ‘dual position of life that placed it at the same time outside history, in its biological environment, and inside human historicity’ (2008: 143). This is what leaves a biological account of the adaptation of humans to their environments ambivalent about what exactly drives this adaptation, as I described in Chapter 1. The relative uneasiness with which biology has sat among the physical sciences and the social sciences at various points over the last two centuries has caused human adaptation to be variously theorised as a physical process, as a function of the lively contingency of the social-ecological system, and as a historical product of human agency. This ambivalence, which can be seen in the various ways in which the discourse of adaptive capacity is deployed, is of central concern in the arguments that I set out throughout this dissertation.

### *The freedoms and capacities of the subject*

Through the imbrication of knowledge and power described above, governmentality constructs its objects and, when directed at a person, it constructs a *subject* of power. As I describe in this section, this positions people as both subjects, in the sense of self-aware agents who themselves exercise power, *and* as objects of power, in the sense of being subject to control. Governmentality simultaneously draws the contours of the subject of governance and its 'field of possibilities' (Foucault 1982: 790) and also delimits the subject and the possibilities available to it, in ways that are neither liberating nor prescriptive or coercive in the traditional senses of these terms. The subject acquires an identity and becomes 'tied to [its] own identity by a conscience or self-knowledge', Foucault argues, as technologies of governmentality target and address the subject in its immediate everyday life (1982: 781). This 'attach[es]' it to its own identity, and imposes 'a law of truth' that the subject must recognise and that others must recognise in it. Thereafter prompted by the 'truths' of the discourses at play in any given site of governmentality, the subject navigates its field of possibilities. The construction, in the context of climate change, of the adaptive Indigenous subject draws on many of the existing discourses through which Indigenous peoples identify themselves.

The subject of governmentality is neither exclusively an individual nor a collective of people – or rather, it is both at the same time, but in different ways. Consisting of both the technologies of disciplinary power that target the human body and the technologies of biopolitical regulatory power that target a multiplicity of bodies, governmentality is both individualising and totalising (Foucault 2003). Thus addressing both the single human subject (that is, the traditional political subject) and the species or population, it involves 'modes of subjectification in which individuals work on themselves in the name of individual or collective life or health' (Rabinow and Rose 2006: 195). My analysis suggests that the adaptive Indigenous subject is in fact constructed primarily as the collective subject of the single community, leaving little room for individualisation within communities. Also apparent in the governance of people as simultaneously individual subjects and as populations is a blurring of representations of them as political agents or

biological objects, which is an ambiguity further complicated by the remnants of biological constructions of race attached to contemporary indigenous identity.

Foucault argues that disciplinary and biopolitical regulatory power, while operating at the different levels of the individual and the collective, overlap in the logic of the *norm* (Foucault 2003). Based on this logic, these forms of power observe or survey various factors that pertain to the conduct of the individuals and populations that are their targets – living and labour conditions, behaviour, etc – and identify on the basis of this knowledge an optimal, ‘normal’ range for each. This is a benchmark that is not valued as good or bad in itself but that is seen as necessary to ensure the ‘right disposition of things’. Constituting an end that in this sense is immanent to life itself, the norm defines the objectives of the governance of individuals and populations. In this way, governmentality seeks to ‘distribut[e] the living in the domain of value and utility [...] *around the norm*’ (Foucault 2008: 144; emphasis added) on the basis of discourses that maintain, paradoxically, that ‘normality [is] natural’ (Rose 1999: 76). To achieve this, ‘continuous regulatory and corrective mechanisms’ are employed (144) to discipline the individual body but also to control ‘the aleatory events that occur in the biological multiplicity’ (Foucault 2003: 252). Thus governmentality monitors and seeks to optimise everything from productivity and education outcomes to birth and death rates, thereby keeping at bay the threats posed by diseases, accidents, and hazardous conditions of environments both natural and urban. In governmentalities of response to climate change impacts, subjects are governed according to implicit norms of adaptiveness.

In the normalizing operation of these disciplinary and regulatory technologies, governmentality can be seen to engage its subjects in a way that depends on their freedom as self-aware agents. Crucial here is the particular conception of power I introduced above. Foucault holds that this power, if it is to be meaningfully distinct from ‘physical determination’, must be understood to be ‘exercised only over free subjects, and only insofar as they are free’ (Foucault 1982: 790). On this view, it ‘presupposes rather than annuls their capacity as agents; it acts upon, and through, an open set of practical and ethical possibilities’ (Gordon 1991: 5). This reflects the equivocality of the term ‘conduct’ in the understanding of governmentality as the ‘conduct of conduct’: the term refers to both leading



others and a 'way of behaving in a more or less open field of possibilities' (Foucault 1982: 789). This form of power governs, in other words, not through brute force but rather through the aspirations and values of subjects themselves (Rose 1999) – aspirations and values that are shaped by the normalising effects of governmentality. In so mobilising the capacities and wills of its subjects, governmentality employs means that, like its ends, are immanent to life (Foucault 1991a: 100). I show how the discourse of adaptive capacity seeks to mobilise subjects in the task of adaptation by appealing to aspirations widely articulated by Aboriginal and Torres Strait Islander communities and their leaders.

Governing 'through making people free' in this way was the 'achievement of the liberal arts of government' which emerged with biopower (Rose 1999: 69). Within liberal governmentality, which is defined by a 'constant suspicion of rule' and caught between 'a fear of not governing enough versus the fear of governing too much' (Rose 1993: 292), freedom figures as a solution in the sense that it constitutes 'a technical means of securing the ends of government' (Dean 1999: 15). Discourses of freedom, through which the subjects of liberal government are 'obliged to be free in specific ways' (Rose, O'Malley and Valverde 2006), thus make possible the modes of 'governing at a distance' that characterise Western liberal societies (Rose and Miller 2010). A key point here is that 'all the essential, natural and defining conditions that tend to be ascribed to the human world', including 'modern forms of subjectivity' and 'contemporary conceptions of agency and will' (Rose 1999: 54), are constructed by liberal political rationalities and constitute both the foundations and products of practices of government. These conceptions of the human world, which construct humans as 'the kinds of creatures who can and do act upon themselves and against their limits, to increase their capacities and powers' (96), form the basis of the political rationalities associated with the discourse of adaptive capacity in the context of climate change. I identify specific articulations of such conceptions as defining the role of the agency of adaptive subjects as well as the role of government in the task of adaptation.

The 'perpetual dissatisfaction with government' (Rose 1993: 292) that begins with liberal government is intensified in 'advanced liberal' or neoliberal critiques of the nation state. In recent decades this mode of governance has taken on new

technologies associated with neoliberal discourses that more directly ‘work upon the capacities of citizens to act on their own behalf’ (Cruikshank 1999: 38-9), constituting human capacity or potential as a target in itself. The central object of governance is no longer ‘society’, as it was in earlier forms of governmentality, but instead the ‘passions of self-identified individuals and collectivities’ (Rose 1999: 46). It cultivates freedom conceived in terms of ‘choice, autonomy, self-responsibility, and the obligation to maximize one’s life as a kind of enterprise’ (Rose, O’Malley and Valverde 2006: 91). As this governmentality extends its pervasive reach into the realm of the identification, hopes and aspirations of its subjects, the role of government is represented in this discourse as limited to providing the conditions upon which the subject can realise its own potential (Rose 1996). One element of the governmentality of adaptive capacity, which is also widely apparent in other sites of neoliberal governance, is the discourse of the ‘enabling environment’. As I discuss in Chapter 7, this envisions the role of government as one of ensuring conditions conducive to the realisation of the existing, latent adaptive potential of subjects.

Biopolitical governance is the management *of* the contingency of human life, which is associated with the risks and challenges that arise in interaction with the environment and that threaten wellbeing and life itself. This mode of governance operates *through* this contingency, by intervening in and leveraging the very aspects of life that generate its contingency – that is, by ‘shaping our exposure to, and creative exploitation of, contingent events and processes in nature’ (Watts 2015). ‘Having to take into account the autonomous nature of the thing to be governed biopolitics therefore seeks to govern through contingency since contingency is what characterises its very object of government, namely the life of species existence’ (Dillon 2007b: 46). With the construction of the freedom of the subject of liberal governmentality, Michael Dillon observes, this contingency came to be seen as housed within the capacity of the human subject for agency and choice. This is a capacity for choice that, exercised within the field of possibilities constructed by governmentality, could then ‘re-inject... contingent uncertainty back into economics and politics’ (2007b: 46). This is the contingency of the social world that the discourse of adaptive capacity attempts to accommodate,

reconciling it with the physical and biological understandings contained within the concept of the social-ecological system, as I argue throughout this dissertation.

In contemporary advanced liberalism, the governance of contingency has in several realms come to centre on the discourse of the complex adaptive system (Anderson 2010; Dillon and Lobo-Guerrero 2009). This is a discourse that, as I described in the introductory chapter, originates ultimately in the study in the biological sciences of the interaction of living systems and their environments. Many current techniques of neoliberal governmentality construct individual freedom in the terms of the complex adaptive system, cultivating a subject that demonstrates resilience in its response to environmental challenges (Walker and Cooper 2011). I argue that the discourse of transformative climate change adaptation builds on that of resilience by placing emphasis on the ways in which adaptive subject is '*capable of achieving self-transformation*' (Chandler 2012: 217; emphasis added). In this sense a central political rationality of the discourse of adaptive capacity posits, and hinges on, the role of human agency to purposively drive adaptive change.

The discourse of the complex adaptive system, which like all discourses tends to manifest in different forms in different sites, has been applied with especially powerful effects in the governmentality of indigenous peoples, among them Australia's Aboriginal and Torres Strait Islander peoples. The ways in which this discourse encounters, and often becomes intertwined with, other biological discourses deployed in relation to Australian Indigenous peoples is critical to the construction of the adaptive Indigenous subject. In the following section, I discuss the role of biopower in constructing racial difference and how discourses of race have always constituted a site of contestation around the biological and historical terms of the construction of this difference.

## **2.2 Race and history**

Biopower places human life in the 'dual position' both inside human historicity and in its biological environment, as described above, but some groups of people have been located by technologies of biological power and knowledge further outside human history and deeper within their biological environment than others. The account of 'race war' developed in Foucault's 1976 College de France

lecture series *Society Must Be Defended* offers, I argue, a valuable starting point for an analysis of how difference in terms of biology and history among people has been constructed, governed and contested. As I discuss in this section, this is one that is relevant to my argument that Aboriginal and Torres Strait Islander peoples are – via the discourse of the social-ecological system, and through the construction of an inherent Indigenous adaptive capacity in particular – increasingly being cast in implicitly biological terms in the context of climate change adaptation.

Scholars of biopolitics, extending Foucault's insights to an analysis of Europe's colonies, have analysed the ways in which colonial governmentality, more than just Western domination (Howell 2004), has produced its subjects. This is one that has replaced an 'unconcealed structure of domination' with a governmentality that 'works through the limited freedoms afforded by state recognition and accommodation' (Coulthard 2014: 3). It operates through the construction of the colonised as 'others' (Scott 1995), constructions that owe much to the explicit and implicit hierarchical classifications of difference among humans that were developed in the ecological, anthropological and geographical study of the interactions of human communities with their environments, as described in the introductory chapter. These classifications and the knowledge developed within these disciplines often functioned to justify and facilitate the governance of different people to imperial ends. In postcolonial and settler colonial contexts, the governmentality of the peoples who now identify as indigenous continues to hinge on the construction of difference and a logic of 'exclusive inclusion' whereby certain features of indigeneity are valorised while others are ignored (Lindroth and Sinevaara-Niskanen 2014; Cameron 2012). This governmentality is directed at the 'improvement' of indigenous peoples (Li 2007), the goal now being to produce 'self-interested and industrious subjects' (Lindroth and Sinevaara-Niskanen 2014).

In his *Society Must Be Defended* lectures, which were only relatively recently translated into English, Foucault offers an idiosyncratic account of the origins of the discourse of racial difference, tracing a discourse of 'race war' that emerged in the sixteenth and seventeenth centuries. As a 'historico-political' discourse, it challenged the 'philosophico-juridical' discourses of universal right that had

defined the era of sovereign rule with the new idea that the '*law is not born of nature... it was born of real battles that can be dated*' (Foucault 2004: 50; emphasis added). This discourse, which was employed to various ends by specific groups asserting specific claims from aristocratic to popular, operates through terms different from those of the universal or neutral perspective of the philosopher or jurist. The speakers of this discourse appeal to what is just or right, but in claims that are 'grounded in history and decentred from a juridical universality' (2004: 52). It is an inevitably 'perspectival discourse', 'strongly marked by a relationship of property, conquest, victory, or nature' (52). Foucault argues that through this discourse these groups, initially challenging absolutist monarchy, engaged in a 'war' with the dominant discourse – a kind of war that precedes and outlasts, or indeed occurs instead of, the violent clashes of the battlefield. This discourse established the possibility of articulations of *difference within society* and of competing interests. It laid the foundations for the discourse of biological races as well as, in another 'transcription', for that of class struggle.

With the 'race war' establishing 'a permanent social relationship', it can be seen as 'the ineradicable basis of all relations and institutions of power' (Foucault 2004: 49). As power relations have become progressively governmentalised, as I described in the first section, government includes the management or neutralisation of this permanent war. The suppression of the perspectival discourse by the dominant discourse that it emerged to challenge is achieved, Foucault argues, by building 'on top of [...] a growing rationality [...] of calculations, strategies and ruses; the rationality of technical procedures that are used to perpetuate the victory' (54-55). This rationality of the prevailing formation of government *redeploys* the terms of the perspectival discourse to achieve this suppression, and the subordinate perspectival discourse becomes one 'that is inevitably disqualified, that can and must be kept in the margins' (57). This subordination began at this point to take on the forms now thought of as characteristic of 'what will become actual racism' (80).

The 'decentred' discourse of the seventeenth century was thus 'recentred' two hundred years later to become a discourse of normalising and centralising power (Stoler 1995: 66). In the nineteenth century, as the biopolitical state 'adopts a biologico-medical perspective' (80), race is cast for the first time in biological

terms. It is, then, 'within the biologized state that modern racism flourishes and rests' (Stoler 1995: 81), as the 'theme of racial purity replaces that of race struggle' (Foucault 2004: 81). As 'a way of separating out the groups that exist within a population' (254-55), race thus became, Laura Ann Stoler argues, 'the organizing grammar of an imperial order in which modernity, the civilizing mission and the "measure of man" were framed', and 'with it, "culture" was harnessed to do more specific political work' (1995: 27). Turned 'against those who had forged it' (Foucault 2004: 81), it '*crushes the historical dimension that was present in this discourse*' (80; emphasis added). In other words, dominant biopolitical discourses achieve and maintain their dominance through the *naturalisation* of what had been historicised by the perspectival discourses of race war. Evolutionism, for example, is 'a way of transcribing a political discourse into biological terms... of dressing up political discourse in scientific clothing' (Foucault 2004: 257).

Racial discourses continue to be deployed to various political ends, and my interest here is in how indigeneity – if understood as a racial historico-political discourse in the broad sense employed by Foucault – appears in discourses of climate change adaptation. I describe in Chapter 4 how the discourse of indigeneity emerged in Australia and around the world as a vehicle of resistance and challenge to the structures of colonial oppression that tend to remain in place even when the period of colonialism has formally concluded. The articulation of indigenous identity has remained fraught, with the essentialist terms in which it has been constructed, to both strategic and compromising effects, threatening to undermine the political commitments with which the discourse emerged. As Foucault observes, efforts to resist forms of biopolitical governmentality have tended to employ the very terms of this governmentality, with the objective of these efforts 'life, understood as the basic needs, man's concrete essence, the realization of his potential, a plenitude of the possible' (2008: 145).

I argue in this dissertation that the discourse of climate change adaptation is one recent instance in which the naturalisation of the historical can be seen. This analysis seeks to contribute to a body of recent scholarship that has examined the racial politics of climate change response, including the construction of racial difference (Cameron 2012; Baldwin 2009; 2013; Grove 2012; Taylor 2014 among others). I argue that in the context of adaptation, the biopolitical governance of

Indigenous peoples naturalises its object as possessing various essential properties that make it more or less adaptive. This is not articulated in the explicit terms of biological difference or racial inferiority, but rather through the naturalisation of *cultural* difference, reflecting the extent to which discourses of Indigenous governmentality can be seen to have shifted in response to critique of earlier, crudely biological discourses of race. In this sense this study is informed by analysis of colonial contexts that identifies culture itself as a technology of governmentality (Coulthard 2014; Stoler 1995; Chakrabarty 2000; Bennett 2004). I analyse the construction of the adaptive Indigenous subject, showing that it is shaped not only by various shifts that have influenced the discourse of indigeneity in Australia, but is also powerfully informed by the discourse of the social-ecological system that defines the dominant mode of adaptation governmentality at present. I examine the ways in which a politico-historical discourse of indigeneity is in this context being 'dress[ed] up' in new 'scientific clothing'. The following section describes how I analyse these discursive manoeuvres.

### **2.3 A history of knowledges**

Foucault argued that the 'historico-political' discourses of race war represented a new kind of historical knowledge, and it was in terms of this kind of historical knowledge, and the charge it advances on dominant discourses, that he defines the task of genealogy in the *Society Must Be Defended* lectures. This is a knowledge that does not explain the unfolding of history in terms of 'the absolute of the law'. Rather, 'it is interested in the battle cries that can be heard beneath the formulas of right, in the dissymmetry of forces that lies beneath the equilibrium of justice' (Foucault 2004: 56). In seeking to reveal this dissymmetry, what it 'is trying to show is that power, the mighty, kings, and the laws have concealed the fact that they were born of the contingency and injustice of battles' (72). This is thus a 'counter-history' or 'an oppositional discourse' that constitutes 'not only a critique of power but also an attack on it and a demand' (73). To the extent that dominant discourses by definition present themselves as natural and necessary, the attempt to uncover the history of the interplay of discourses – including their competing accounts of history – through genealogical analysis is to similarly challenge these discourses and this naturalisation. My analysis of the governance of climate change adaptation in Indigenous Australia consists of a

genealogy of the elements that constitute the discourse of adaptive capacity, focusing on the dynamics of biological and historical readings of Indigenous vulnerability and adaptive capacity.

As an investigation of the history of discourses, genealogy involves tracing the 'ruptures and reinscriptions' of both 'learned' and 'disqualified' knowledges (Stoler 1995: 61 and 65) – that is, the reconfiguration over time of both dominant discourses and the perspectival discourses or counter-histories. This involves elements of a method employed by Foucault in his early work which he termed archaeology (Walters 2012). Archaeology surveys the field, tracing out the contours of the rationalities that underpin modes of governmentality and investigating the 'various historical layers of what constitutes, or constituted, knowledge' that have informed these rationalities (Darier 1999: 9). Like an archaeological site of excavation, this exposes the assumptions lying beneath and holding up what is understood to be true. It reveals how some discourses are constructed as natural and necessary, and thereby impose restrictions on what can be thought and done (Fadyl et al. 2012). Taking over from this survey, genealogy – precisely as the name suggests – resembles the task of tracing family lineage (May 2006): of examining how a particular discourse came about as well as where it falls apart, and where it and its elements may be redeployed to new ends. It accounts for moments of discontinuity and change by 'rediscovering the connections, encounters, supports, blockages, plays of force, strategies and so on which at a given moment establish what subsequently counts as being self-evident, universal and necessary' (Foucault 1991b: 76). This genealogy uncovers how those discourses that are more dominant have become rationalised and congealed within governmentalities, revealing the 'relations of force and the play of power [that] are the very stuff of history' (2004: 169).

These methods of analysis are interested not so much in what discourse means as what it achieves: its 'functions in connection with other things, what it makes possible, the surfaces, networks and circuits around which it flows, the affects and passions that it mobilizes and through which it mobilizes' (Rose 1999: 29-30). Discourse – a term which Foucault used variously to refer to 'the general domain of all statements, sometimes as an individualizable group of statements, and sometimes as a regulated practice that accounts for a number of statements'



(1972: 80) – consists of, as described above, practices both linguistic and non-linguistic ‘that systematically form the objects of which they speak’ (49). Discourses are not meanings *per se* but ‘systems of meaning production [...] that “fix” meaning, however temporarily, and enable us to make sense of the world’ (Shepherd 2008: 20). Any meaning that can be attributed to discourse is only a temporary achievement for a specific purpose, always arising in a specific state of relations of power (Foucault 1984). The task of analysing discourse involves – as I discuss below in a closer discussion of my research method – ‘decompos[ing] it into its constituent elements’ (Walters 2012: 120), for by ‘fragment[ing] what was thought unified[,] it shows the heterogeneity of what was imagined consistent with itself’ (Foucault 1984: 82). It is thereby revealed to be nothing more than ‘a series of discontinuous segments whose tactical function is neither uniform nor stable’ (2008: 100). It becomes possible, in other words, to see that discourse is not necessary, that it lacks a singular, essential meaning. Indeed, the ‘multiplicity of discursive elements that constitute any given discourse can come into play in various strategies’ (100), even to competing ends – as has occurred in the various iterations of the discourse of race.

The subjects constituted by discourse are therefore not ‘given in advance but always in the process of making and being made under contingent circumstances and in combination with particular resources’ (Walters 2012: 137). In light of Foucault’s understanding of power as consisting in relations that depend for their existence ‘on a multiplicity of points of resistance: these play the role of adversary, target, support, or handle’ (Foucault 2008: 95), the construction of subject positions can be seen as a necessarily relational and collective, as well as historical, achievement (May 2006). Governmentality therefore ‘elicits’, rather than determines, its subjects (Dean 1999: 32). With subjects participating in the discourses that govern them in the sense that discourse exists within relations of power, they hold the possibility to resist dominant discourses. The latter typically occurs when elements of those discourses are redeployed to different ends, effecting ‘reversals’ of their function (Darier 1999).

An analysis of the history of discourses examines the ways in which ‘human beings “problematize” what they are, what they do, and the world in which they live’ (Foucault 1986: 10), including problematisations of the means and ends of

governance that are reflected in the political rationalities discussed above. The focus of the analysis of the governmentalities that emerge from these problematisations is the 'practices for the production of truth and knowledge' concerning the objects and task of government, and the discursive practices through which we are governed and through which we govern ourselves' on the basis of those knowledges (Dean 1999: 18). Acceptable formulations of problems and of solutions to those problems are defined by the 'regime of truth' in operation in society at any given time, which 'accepts and makes function as true' certain kinds of discourse (Foucault 1980: 131). Part of the power of particular discourses arises from the ways that, in constituting 'the objects of which they speak, [...] they conceal their own invention' (Foucault 1972: 49; emphasis added) – and indeed Foucault commented that 'power is tolerable only on condition that it mask a substantial part of itself' (1976: 86). One such way of concealing the invention of discourse is the naturalisation effected by scientific knowledge, which lends it an insurmountable authority to speak truth about the world and makes these truths appear uniquely unquestionable and closed to contestation. Genealogical analysis seeks to 'break with our current systems of rationalisation' to expose how this closure is achieved by scientific and other dominant discourses (Tamboukou 1999: 210).

The objective of revealing the historical contingency of what is considered natural and necessary is therefore necessarily political. 'In showing the role of thought in holding [discourses] together, [genealogical investigations] also show that thought has a part to play in contesting them' (Rose 1999: 59), and the objective of my research, in offering an account of the discursive history of adaptation thought, is to contribute to the potential to question and challenge current and emerging ways of thinking about climate change adaptation. This analysis is oriented towards understanding the implications of current discourses of adaptation, but in focusing on the discursive construction of the adaptive Indigenous subject (and reading the implications from the logics and visions that are inscribed *within* this construction), it does not explore the effects of this discourse or the engagement of Indigenous peoples with it in the wider discursive contexts in which it is situated. This analysis is also shaped and limited by my position as a non-Indigenous, city-based researcher, and my necessarily partial understanding of,

and problematic and precarious role in discussions of, the interests of Indigenous peoples in questions about the directions that climate change adaptation should take. This position has made all the more crucial the constant critical reflection that is imperative for all researchers for, in the words of Tomlinson, ‘not only will I, through ignorance, “silence” voices in the discussion, I will also organize and “discipline” the discourse via my discursive categories’ (Tomlinson 1991: 28). Thus, while my analysis of the construction of the adaptive Indigenous subject seeks more than anything to *understand* the representation of Indigenous peoples in the context of adaptation – and hopes to thereby contribute in some way to the resources available to Indigenous communities and leaders in deciding the direction that adaptation research and policy should take – it remains the cases that it is complicit in reproducing representations of Indigenous peoples within the context of the uneven relations of power of the researcher and the researched (Truman et al. 2000), and in particular ways that reflect the implicit value of certain ‘ways of knowing’ within the Western academy (Smith 2002). The following section describes the material included in my analysis of the discourses of adaptation in Indigenous Australia and the process of analysis.

## **2.4 Methods of analysis**

The genealogical analysis of governmentality is less a method of analysis than an analytical perspective or point of view (Rose 2007; Foucault 2008). For me, this perspective is a particular way of holding together attention to both detail and to context – in a sense to zoom in as well as out at the same time – in order to place temporally and spatially specific empirical detail within its discursive history. This involves close attention and careful interpretation in a process that Foucault described as ‘grey, meticulous, and patiently documentary’ (Foucault 1984: 76). My analysis has drawn on a large body of material: first, a corpus of texts related to the issue of climate change adaptation in Aboriginal and Torres Strait Islander communities; second, the international academic literatures on climate change adaptation, within which I identified a number of discourses that have informed the Australian corpus, including the relatively recent shift to what I refer to as the discourse of adaptive capacity; and third, critical scholarship on the histories and significance of the diverse ideas that have fed into the contemporary adaptation

literatures, which helped me to make sense of the picture emerging from the study of the first two groups of texts.

The corpus related to Indigenous adaptation consists of texts produced between 2000 and 2015 by the main groups of actors contributing to discourses of adaptation in Indigenous communities, which are located in government, the research community and Indigenous organisations. These texts include, but are not limited to, reports, websites, policy and position papers, and vulnerability and risk assessments. Those from government are from all levels of government: federal, state and territory, and local. Some of these are Commonwealth reports and Council of Australian Governments (COAG) statements that sketch out a response at the national and state levels and reflect on the division of authority and responsibility with respect to adaptation. Others are risk assessments or plans produced at the state or regional level and are concerned with specific Indigenous communities. The texts from Indigenous NGOs include those produced by land councils and Aboriginal corporations (bodies which manage community affairs at the most local level), as well as other bodies such as the Northern Australian Land and Sea Management Alliance (NAILSMA). The texts from the research community include the publications produced within the Indigenous stream of National Climate Change Adaptation Research Facility (NCCARF), which consist of a research plan by Langton et al. (C48/2012) and nine of among the most comprehensive vulnerability assessments undertaken in Australian Indigenous communities to date. The texts in this corpus are listed chronologically in the Appendix with a code that is included in each citation throughout the dissertation. These texts are not included in the list of references.

I undertook an initial reading of the texts to get a sense of the dominant themes and ideas, and only then developed a coding framework on the basis of the themes that became apparent. The coding process, in which I used Computer-Assisted Qualitative Data Analysis Software *NVivo*, involved identifying, from the many thousands of pages that constituted the texts of my corpus, excerpts of particular interest and significance, and organising these excerpts into groups according to ideas and themes. Together these aspects of coding constitute an important initial stage of analysis (Cope 2005) and, as I tried to understand the place and significance of the ideas in the texts in the broader discursive terrain

that was coming into view, I continued to rearrange the coding framework to reflect my emerging interpretation of this terrain.

Importantly, the coding process and the analysis more broadly did not set out to look for any particular ideas or concepts. The analysis of discourse involves suspending, as much as is possible, the sorts of preconceptions with which any given issue is typically approached (Foucault 1972). Reflecting the view that the subject of discourse has no existence or essential meaning independent of the discourse that constructs it, I was interested in the discourses – that is, the relations of power and their effects – that can be seen to be at play in the texts (Foucault 1982; 2003). With analysis proceeding on the basis only of what can be seen in the texts, discourses are in an important sense ‘analysed *in their own terms*, in terms of the identities and identifications which they themselves constructed, objectives they set themselves, the enemies they identified, the alliances they sought, the languages and categories they used to describe themselves, the forms of collectivization and division that they enacted’ (Rose 1999: 59; emphasis added). In the initial stages of analysis I observed in the corpus the conflicting representations of Indigenous peoples as particularly vulnerable and uniquely resilient in the face of climate change, as well as a variety of statements related to, among other things, knowledge of and authority with respect to climate change; roles and responsibilities in directing and facilitating adaptation; and the significance of country and of community development challenges and goals to Indigenous adaptation.

Analysing discourse involves asking of a piece of text ‘what is this an instance of?’ (Weiss 1995: 154). As I made sense of the key discursive elements within the Australian corpus and began to interpret them in light of the international literatures on adaptation, I attempted to understand what was being achieved by them. This involved trying to discern the significance of these elements from their discursive context, for they ‘are finally more important for *their place within intellectual practices*, than they are for what they may be said to “mean” in the abstract’ (Bové 1990: 51; emphasis added). I did this by looking at the meanings that were generated through the properties attributed, associations established, and distinctions drawn. In this stage of mapping out the discursive terrain, which is the archaeological dimension of analysis introduced in the preceding section, I

observed *how* discursive elements come together to constitute identities – including that of the adaptive Indigenous subject – and other discursive objects – including the problem of climate change and the solution of adaptation.

Genealogy extends this understanding of what the configuration of discursive elements in any given context are working to achieve by investigating the histories and political stakes of the discourses that these configurations constitute. To do this, I looked for consistencies and variations within the discursive terrain – including continuities and discontinuities over time – that offered hints to the parameters, origins, functions and effects of the discourses that were becoming apparent to me. This analysis attends to the conditions that make particular discourses possible, asking how and when ‘it became first possible to speak of the issue’ (Armstrong 1990). Discontinuities can also mark the emergence of discourse, allowing exploration of the ‘play of specific transformations’ (Foucault 1978: 59) whereby discourses often emerge in response to, or as backlash against, other discourses. In addition to a reading of my corpus and the adaptation literatures, for this my interpretation also drew on existing critical scholarship in order to place current discursive formations in histories deeper than that of thinking about adaptation in the context of anthropogenic climate change, or in Indigenous Australia specifically.

My analysis identified three discourses that have dominated the research and practice of adaptation to anthropogenic climate change since the 1990s: one that understands vulnerability in terms of exposure to biophysical risk and adaptation as the management of that risk; another that offers a political-economic account of vulnerability and looks to community development models for the potential to reduce that vulnerability; and a third – that of adaptive capacity – which takes a multifarious perspective on vulnerability but insists that adaptation is best approached within the discursive framework of systems thinking. These discourses define themselves in relation to one another, and while they often coexist in the same texts, they also hold different and fundamentally conflicting visions of what adaptation ought to entail. Although they have emerged in approximately chronological order, all are derived from longer trajectories of thinking about how human societies interact with environmental challenges. Each takes a particular form in the context of Australian Indigenous communities,

becoming attached to existing discourses in this context that have their own stories – among them those of indigeneity, self-determination and country.

Genealogical analysis seeks to understand how these discourses have acquired their power, and with what implications, by examining the logics that hold them together. In addition to the sense in which a Foucauldian analysis examines discourse on its own terms, as I described above, this analytical perspective also and simultaneously refuses to take discourse at face value, instead ‘read[ing] against the grain of the text’ (Tonkiss 1998: 258). This can involve looking beneath the surface to the ‘unexamined ways of thinking [on which] the accepted practices are based’ (Foucault 1994: 456); ‘seeing’ absences, which ‘can be as productive [of discourses] as explicit naming’ (Rose 2001: 157); and investigating the ‘underside’ of things that appear good (Walters 2012). This critical scrutiny of discourses makes it possible to see how some discourses come to dominate a discursive terrain by ‘conceal[ing] their own invention’, as I discussed in the previous section. It also makes it possible to draw out the logical implications of what is not explicitly stated in these dominant discourses, but which can hold significant effects for their subjects. My analysis identifies within the discourse of adaptive capacity the logics of holism, interconnectedness, integration and pragmatism – all of which are motifs of systems thinking, play a role in the academic theory of the social-ecological system and, I argue, can have powerful effects through what they naturalise and necessitate in the discourse of adaptive capacity.

Developing my interpretation of the discursive terrain of climate change adaptation, and of the discourse of adaptive capacity in particular, involved working across all of the bodies of material I drew upon, returning again and again to important texts within my corpus as well as the wider academic literatures. Analysis is an iterative process of ‘empirical study and abstraction’, in which ‘theoretical categories are drawn from and answer to the empirical data’ (Milliken 1999: 234), as well as one of attending to both detail and context, and of both taking discourse on its own terms and refusing to take it at face value, in the particular ways described here. It ‘proceeds by way of progressive’ but ‘necessarily incomplete saturation’ (Foucault 1991b: 77), which stops when additional texts can be handled by the interpretation already developed without

generating completely novel or incongruent insights (Nelson and Hardy 2002; Milliken 1999).

## **2.5 Conclusion**

This chapter has introduced my analysis of Indigenous climate change adaptation as site of governmentality. I have argued that this approach offers a means to uncover the discursive shifts that have given rise to the current construction of the adaptive Indigenous subject. In particular, my analysis attends to the ways that the biopolitical governance of adaptation addresses this subject as a biological being – which, as I show in the following chapters, is at odds with a more political reading of indigeneity and the historical circumstances that shape the capacity of Indigenous Australians to adapt to the impacts of climate change.



### **Chapter 3: Discourses of human adaptation to climate change**

This chapter shows that at present the research and governance agendas for adaptation to the impacts of anthropogenic climate change centre on a discourse of adaptive capacity, defined as ‘the ability of a system to evolve in order to accommodate environmental hazards or policy change’ (Adger 2006: 270). Interpreting this discourse as an expression of the biopolitics of the interaction of the living organism with its environment, I situate it in a trajectory of twentieth century environmental thinking and governance that has drawn from ecology a systems theoretical framework to understand humans as part of the Earth as a whole. With humans located within the discursive terrain of adaptation in a ‘dual position’ both ‘in their biological environment’ and ‘inside human historicity’, in the words of Foucault (2008: 143), I argue that the discourse of adaptive capacity has emerged at the intersection of distinct discursive currents as an effect of contestation about the extent to which human adaptation is to be understood in biological or historical terms. Crucial for the development of the discourse of adaptive capacity is the ways in which this duality in fact represents two different accounts of *history* – the former understanding life to be determined by time as an evolutionary ‘principle for the development of living beings’ (Foucault 2002: 164) as discussed in the introductory chapter, and the latter invoking ‘human historicity’ to interpret events in terms of another kind of contingency altogether.

I outline in this chapter how the discourse of adaptive capacity has come about in a series of discursive shifts that have seen human adaptation reconceived since its early theorisation in ecological approaches in the disciplines of geography and anthropology as an autonomous and natural process. With adaptation therefore not seen to require governance, it is only as a growing appreciation of the unprecedented rate and scale of anthropogenic climate change impacts has called

into question existing societal capacity to adapt, that adaptation has become established as an object of research and governance in the international sphere of climate change response. Challenging initial approaches that took the form of traditional risk assessment and management, critical voices from developing countries and the social sciences have since sought to position adaptation within the historical and political contexts in which it is undertaken, proposing that it is best understood as inseparable from the questions of development and other issues that define these contexts. Most recently, the discourse of adaptive capacity, which theorists claim offers a 'conceptual bridge' to integrate some of these critical insights into the discursive framework of the social-ecological system (Engle 2011; Miller et al. 2010), constructs a vision of 'transformative' adaptation. I argue that this vision of transformative change in the face of climate change impacts, which is to be realised through the active agency of subjects and reflexive, participatory modes of governance, constitutes an emerging governmentality of adaptation.

This overview of the discursive space of climate change adaptation is based on, and provides a review of, some of the core academic literatures in this space. The discursive shifts set out here are not strictly chronological, with some temporal overlap as key discursive elements have been engaged and reconfigured by different actors to different ends. These discourses are nevertheless best understood as following from one another in the sense that, as I argue, each disjuncture represents an effort to respond to the shortcomings of previous ways of conceiving the task of adapting to climatic change. By outlining the dynamics through this discursive history of what I characterise as broadly biological and historical ways of thinking about human vulnerability and adaptation, this chapter provides the foundation for the analysis in the following chapters of how the discourse of adaptive capacity appears in Indigenous Australia, and how this dynamic has generated contrasting representations of Indigenous vulnerability and adaptation at this site.

### **3.1 The global environmental crisis of climate change**

While climate change has a long history in human thought (Hulme 2009), the contemporary discourse of anthropogenic climate change has garnered public

attention and growing scholarly and government investment as one aspect of a concern that emerged in the 1960s and 70s about what has been framed as a global environmental crisis. This concern, which has centred on the relations of humans with their natural environments and the increasingly apparent capacity of each to negatively affect the other, has marked out a twentieth century biopolitics of environmental crisis. Insights from the discipline of ecology have been at the core of this biopolitics, offering a conception of this relationship as one between the parts of a larger whole: a system no smaller than the entire planet. As this section shows, it was with the objective of maintaining the stability of this planetary ecological system – understood in the twentieth century as necessary for human flourishing (Szerszynski 2010) – that responses to the problem of climate change were originally conceived. These responses envisioned the possibility of calibrating and optimising the ‘thermostat’ and other settings of the Earth system as an engineer does those of a machine. A very different role for humans in relation to the ecological system was imagined in some early theories of the adaptation of human communities to the threats posed by environmental change in the disciplines of geography and anthropology, on the other hand. These saw communities as functioning within their local environments in ‘natural’ cohesion with the ecological elements of the system – and indeed it was partly for this reason that adaptation was not initially a priority of climate change governance. These perspectives reflect understandings of the place of the human in the ecological system that are at odds with one another – positioning them on the one hand as distinct from, and on the other as part of, their ‘biological environments’. This tension is, I argue, implicated in later shifts in how human agency in the process of adaptation has been conceived.

#### *The Earth system and the place of humans in it*

The mid-twentieth ecological paradigm that informed the identification of climate change as a global environmental crisis was underpinned by the ecological theory of the system and of the relations of the whole and its parts. This was a paradigm that saw in the interaction of living organisms and their environments a tendency towards stability and equilibrium, or what is popularly thought of as ‘the balance of nature’ (Botkin 1990). The concept of an ‘ecosystem’ coined in 1936 by Arthur Tansley, and then developed most notably in the work of Eugene Odum in the

1950s, offered a way of theorising how this equilibrium is achieved and maintained through the cycles and circulations among organisms and the environment that together constitute it. The groundwork for Odum's work had been laid for the extension to the entire Earth of this understanding of the ecological system and its logic of stability through regulation with Vladimir Vernadsky's theory, published in 1926, of the biosphere as a 'life-saturated envelope of the Earth's crust' that constitutes an 'indivisible whole' (Vernadsky 1998: 91 and 40). Within the single entity of the biosphere, all life, including human life, is considered to be subject to universal natural principles and therefore also the same methods of analysis (Elichirigoity 1999). Living and non-living matter is understood to be 'mutually formative' and 'functionally equivalent', together constituting an integrated self-organising whole that would come to be referred to in contemporary discourses as the 'Earth system' (Bryant 2006: 35 and 37). The capacity of this system to self-organise, or adapt, to endure disturbance by external forces was at the core of systems ecology – which was at once an academic discipline, a practical programme for the management of environments, and even a social movement (Kwa 1993).

Humans have occupied, then and since, an ambiguous position both within and without this concept of the ecological system (Gamm 1985). This is an ambivalence, Jozef Keulartz argues, to which systems ecology 'owes much of its ideological appeal' (1995: 150). Humans (and their technologies) were included in early conceptions of the Earth system, and were taken to be 'first and foremost ecological rather than political creatures' (Bryant 2006: 140), and were therefore analysed in the same ways as the ecological components of the system. At the same time, and paradoxically, the capacity to conceive of, and then to attempt to manage, such a system established an external position from which to view and act on it – and indeed Vernadsky's observations were of an Earth already reshaped by human activities and technologies. In other words, systems ecology simultaneously reduced human agency to a component within the ecological, even as it recognised human agency to intervene in the functioning of the system. The ambiguity of this position, whereby 'humans are paradoxically both empowered to create techno-ecological systems and relieved of responsibility for

them' (Bryant 2006: 14) has, as I explore, shaped the politics of climate change response and adaptation more specifically.

The imperative of ecosystem stability that dominated environmental thinking in the twentieth century was seen to necessitate intervention to curb and correct the increasingly apparent impacts of humans on their natural environments. The discipline of ecology was tasked with 'mak[ing] the vital circulation of matter and energy as swift, efficient and wasteless as it can be made', in the words of H. G. Wells and Julian Huxley (Worster 1994: 314), reflecting the original conception of the discipline as 'the economy of nature'. Apparent in the various ends to which ecological discourses were deployed is the more fundamental meaning carried in the prefix of both terms and derived from the Greek *oikonomia*: that of management. Ecology thus constituted a technology of management or governmentality, whether of local ecosystem, empire – via its application in the governance of colonial racial orders – or indeed the whole Earth system. Based on this promise of management, it was thought that by 'knowing the limits of an ecosystem [...] scientists could measure and monitor its stressors and keep them within acceptable ranges so as not to overload the system beyond its ability to correct itself' (Bryant 2006: 6). The possibility of this management by a human agency positioned humans as in a sense outside of this system.

The application in the 1960s and 70s of these ideas and new computer modelling techniques to the analysis of the whole Earth made possible the emergence of the spectre of global environmental problems and their interpretation as the effects of a failure to manage the operation of the system within its limits. Howard Odum, Eugene's younger brother, drawing on developments in cybernetics and the possibility of control and surveillance with the development of military information technologies of the 'Cold War' era (Edwards 1997), claimed that data capturing the dynamic flows of energy within systems could enable computer models to generate 'predictions about the future or about responses to perturbations' (Taylor 1988: 229-30). The highly influential 'limits to growth' thesis published in 1972 employed such modelling to suggest that people were rapidly pushing the Earth towards limits that, if breached, would have considerable consequences (Meadows et al. 1972). With alarm that the growing human population was facing an 'inevitable' food crisis (Ehrlich 1971) and

‘collapse’ of the environmental commons (Hardin 1968), humans confronted the idea that they were disturbing the balance of nature. This imbalance was attributed to a ‘failure to perceive the environment as a totality and to understand and recognise the fundamental interdependence of all its parts, including man himself [*sic*]’ (US Environmental Quality Council 1970, cited in Oates 1989: 14). The ‘idealistic’ holism extolling the unity of the parts that had been derided by Tansley and other systems ecologists would thus, through a fear of the implications of ecological imbalance, begin to re-emerge in the latter half of the twentieth century.

The image of the globe – first viewed and photographed from space during the Apollo 17 space mission in 1972 (Jasanoff 2001; Elichirigoity 1999) – offered a sense of the fragility of the Earth; at the same time, humans could imagine themselves insignificant and blameless – invisible even, as they were in images of the Earth viewed from space (Litfin 1997). The discourse of Spaceship Earth powerful at the time captured a sense of the vulnerability of both the ‘limited’ Earth (Bryant 2006: 144) and of the humans on board a vessel that was ‘filled to capacity and beyond and running out of food’ (Ehrlich and Ehrlich 1970, cited in Adams 2009: 51). The ambivalence around the place of humans meant that they figured in this metaphor neither as ‘just another species along for the ride’ nor as ‘remote operators capable of directing and manipulating the planet with complete detachment and control’, but rather somewhere between (Bryant 2006: 9). These images provided the basis for a ‘humanist call for unity’ (140) as an early expression of a discourse of integration that, as I discuss below, reappears in the contemporary discourse of adaptive capacity.

Science and management on a global scale was considered necessary to correct ecological imbalance by curbing the growth trends that were driving it and to thereby return the Earth system to a stable, steady state. The discourse of sustainable development emerged as a way to reconcile the elements that had led to this imbalance. It stemmed from but softened the neo-Malthusian stance of the ‘limits to growth’ thesis by insisting that growth, both economic and population, need not be curtailed altogether but merely moderated and harmonised. Technocratic and ‘apolitical’ means to balance environmental, social and economic objectives were seen as necessary to deal with the new category of

‘global problems’ (Escobar 1994). A crisis seen to heed no borders was thus responded to with a single, global solution in the form of ‘management [...] of planetary proportions’ (Escobar 1994: 193), leading to the consolidation of a global political and scientific community around environmental issues (Adams 2009).

#### *Early responses to climate change*

It was in this context that in the 1980s anthropogenic climate change joined other environmental problems that were interpreted as imbalances in human-Earth relations, and understood as both products of and threats to human life (Elichirigoity 1999). A global infrastructure of atmospheric monitoring networks housed within the World Meteorological Organization from the 1960s (Edwards 2010) made possible the detection of current global climate change as a divergence from what was perceived as the relative stability of historical climates, a divergence attributed to alterations in the composition of the atmosphere brought about human activity (Weart 2010). The IPCC was established in the late 1980s and briefed to review the issue of climate change and make recommendations on ‘response strategies available to global society for inclusion in an international treaty’ (Miller 2004: 55). In assessment reports published approximately every six years since, the three working groups of the IPCC set out the state of knowledge of the science of climate change, its impacts on society and ecosystems, and possible responses to prevent unacceptable impacts. This body of knowledge has formed within an emerging science of the ‘Earth system’ that united ‘the physical, biogeochemical, and later, human sciences into an integrative and predictive framework’ (Uhrqvist 2014: 4) through research programmes such as the International Geosphere-Biosphere Program established in 1986 (Lövbrand et al. 2009). The UNFCCC was established in 1992 to facilitate the responses recommended by the IPCC and thereby seek to prevent ‘dangerous anthropogenic interference with the climate system’ (UNFCCC 1992).

What is taken to be the globality of climate change with reference to both its origins and its consequences – ‘that is, greenhouse gases emitted anywhere on the globe will have consequences everywhere on the globe’ (Lövbrand and Stripple 2006: 217) – has been seen to implicate all people, constructed in this

discourse as an undifferentiated human figure. With all of humanity simultaneously the perpetrator and the 'collective victim' (Methmann and Rothe 2012: 324), it is a universal subject – simultaneously everyone and no one – that responds to the challenge of climate change. This discourse has meant that attention to the vastly different parts played by people in different social worlds was discounted, at least initially, in favour of a discourse of equal responsibility for a shared planet that underpins the UNFCCC framework. This sense of shared responsibility was inscribed in the principle of 'common but differentiated responsibility' included in the UNFCCC text. In distinguishing between the roles of Annex I (mostly industrialised countries and those with economies in transition) and non-Annex I (mostly developing countries), this principle represented an acknowledgement – albeit a limited one – of the differences among the Parties to the Convention. I describe below how the theme of differentiation would later become more prominent in discourses of climate change as a counterpoint and challenge to that of commonality and unity.

These early discourses of climate change response were premised on an assumption that this human figure, upon recognising its responsibility through the consolidation of climate science, would rationally respond to the problem by changing its behaviour (Shove 2010), which would in turn result in effective measures at individual and collective levels. This assumption was grounded in a modern scientific rationality that underpins the systems ecological discursive framework more widely – as Lövbrand et al. point out, 'Earth System Science harbours an inherent confidence that a better understanding of the effects of "human plundering" will lift veils of ignorance' (2009: 10). The rational response to climate change was considered to be to mitigate or halt the processes of anthropogenic climate change by tackling them at their cause, and thus mitigation was the first and, initially, the only response to the problem. On the basis of the linear, scenario-based division of the work of the IPCC in terms of cause-impact-response (Beck 2011), and the corresponding objective of the UNFCCC to reign in 'anthropogenic interference in the climate system', the root cause of the problem of climate change was perceived to be excessive greenhouse gas emissions. The mitigation solution involved the measurement and administration of cumulative emission levels to maintain what is imagined to be a global thermostat (Hulme



2010). The goal of avoiding dangerous climate change was translated into global temperature targets, forming the basis for the management, within the UNFCCC framework, of greenhouse gas emissions through a global 'rationing system' (Grist 2008: 793) or 'balance sheet' (Rothe 2009).

With mitigation the primary objective of the international climate regime, there has until recently been little consideration of and governmental support for what is referred to as adaptation, which has been understood as the 'cognitive or behavioural response at individual and collective levels' to adjust to changing environmental conditions (Adger et al. 2009a: 10). Adaptation was initially deemed within the IPCC and UNFCCC frameworks unnecessary at best and counterproductive at worst. Adaptation appeared in the IPCC's implicit cause-impact-response equation only insofar as it would be required in the event that mitigation policies failed (Beck 2011). In the early years of the UNFCCC process, it was initially seen by most as necessary 'only in a distant future' (Jerneck and Olsson 2008: 172) and in the meantime as undermining the case for deep emission reductions (Wilbanks and Sathaye 2007; Tompkins and Adger 2005). Hence, while mitigation could alternatively be conceived as only one possible form that adaptation – if understood as a broader category of responses and adjustments to the emerging threat of climate change – could take, the two have been defined and treated as distinct, often in ways that have pitted them, and their associated communities of researchers and negotiators, against one another (Pelling 2011; Tol 2005).

It is important to note that, within the governance framework of the UNFCCC, adaptation was considered unnecessary in another sense. Based on the origins of the adaptation concept in evolutionary biology, human adaptation was considered something that would occur naturally or automatically as communities, like other living systems, make adjustments to ensure survival (Watts 1983a; Zimmerer 1994). The concept of adaptation had been applied to humans in ecological approaches in the disciplines of geography and anthropology to investigate how societies respond to environmental conditions. A conception of human societies as *adaptive systems* featured in the fields of cultural ecology and ecological anthropology in the 1950s and 1960s and in research on natural hazards in the 1970s (Watts 1983; Orlove 1980; Zimmerer 1996). Underpinning

these fields of research was a conception of the environment as the relatively stable backdrop posited in Charles Lyell's gradualist, uniformitarian geological account of deep time – which maintained that the forces that have shaped evolution are, if not predictable, regular and characteristic of the behaviour of the Earth (Brooke 2014; Worster 1994). Environmental hazards were broadly regarded as 'phenomena of nature with varying effects on man [*sic*]' (Burton and Kates 1964: 424) that are 'caused by forces extraneous to him [*sic*]' (413) and to which humans can only react.

These fields differed to some extent on the nature of human response to such environmental disturbances. The hazards school always theorised adaptation as purposeful, preventive adjustment of a largely technocratic nature (Burton et al. 1978). In contrast, in mid-century cultural ecology and ecological anthropology, it was understood to occur more through the homeostatic operation of culture – which, as critics have pointed out, constituted a functionalist understanding of 'regulation [...] happening behind the backs of actors' (Watts 2015: 31; Watts 1983a; Orlove 1980). In these latter perspectives, culture was seen as a mechanism that ensures a return to stability following environmental disturbance (Kottack 1999), reflecting the 'equilibrium paradigm' of ecology dominant at the time. On 'this Darwinian view', 'cultural practices are [...] equated with genetic characteristics' (Smit and Wandel 2006: 283), with evolution of human societies occurring via the selection by environmental forces of randomly emerging cultural practices that just happen to prove the most successful. In short, this was an understanding of adaptation that took the human to be an element of an ecological system and an object of natural processes in the same way as any other element – certainly not an agent directing ecological processes. It would be only later, as adaptive capacity was increasingly called into question, that it would become possible and necessary to begin to conceive of a human agency driving the process of adaptation.

On the basis of these early understandings of adaptation, it was therefore initially argued that 'autonomous adaptation to a changing environment already occurs in resource-dependent societies, and will continue to occur in the face of climate change' (Moore 2010: 75), with 'the invisible hand of either natural selection or market forces' stepping in to ensure that societies and ecosystems adjusted to

various climatic changes (Kates 2000: 5). Because adaptive capacity had been regarded in the understandings of adaptation in cultural ecology and ecological anthropology as 'something inherent in ecosystems and society', it entered climate change discourses as something that could be assumed and as 'therefore not requiring explicit policy' (Schipper 2006: 88). In other words, not only could premature consideration of adaptation within the UNFCCC framework derail mitigation policy, but the question of adaptation was, in its essence, redundant. The following section describes how, within a relatively short period, this position was reversed, and adaptation became an object of research and governance.

### **3.2 The emergence of adaptation governance**

The idea that the explicit governance of adaptation is unnecessary, as was suggested by the cultural ecological and ecological anthropological perspectives outlined in the previous section, 'has all but disappeared' as it has become clear in the perceptions of many that the unfolding impacts of climate change are inevitable and considerable (Moore 2010: 75). It has since been argued that, irrespective of any possible future mitigation success, 'we already know that adaptation is necessary' (Adger et al. 2009a: 2). The possibility that the nature and scale of climate change impacts may exceed the capacity of societies to automatically adjust in the ways described above has placed the question of *adaptive capacity* at the heart of the governance of adaptation. This in turn has meant that at the end of the last century governmental intervention would begin to be seen as essential to monitor and reduce levels of vulnerability to ensure that adaptation within the local community occurs. Early modes of vulnerability analysis focused, as I describe in this section, on biophysical risks, with intervention initially expected to take the form of the projection and monitoring of impacts, and technological and infrastructural measures to minimise exposure to them. While this was clearly a move away from earlier assumptions of autonomous adaptation, in leaving the nature of vulnerability and adaptive capacity under-theorised, this approach retained elements of the human ecological theories outlined above and left itself open to critique that would soon begin to be levelled against it.

The construction of climate change impacts as unprecedented in nature and scale – an idea that was for a long time muted by the contested representation of climate change in the early IPCC reports as ‘reassuringly gradual’ and incremental (Wynne 2010: 295; Forsyth 2015) – established the need for vulnerability analysis, and implicitly problematised vulnerability and adaptive capacity as factors to be investigated and no longer assumed. The IPCC’s ‘first-generation’ approach to the assessment of vulnerability (Füssel and Klein 2006: 201), a measure of the extent to which people are negatively affected by the impacts of climate change, evaluated it as the effect of three elements: exposure, sensitivity, and adaptive capacity. Exposure refers to the presence of people and the resources and infrastructure on which they depend in ‘places and settings that could be adversely affected’ by environmental stress (IPCC 2001a) and sensitivity to the degree to which they would be ‘modified or affected’ (Adger 2006: 270) in the event of such stress. Finally, adaptive capacity is defined as ‘the ability of a system to evolve in order to accommodate environmental hazards or policy change and to expand the range of variability with which it can cope’ (Adger 2006: 270). With vulnerability effectively referring to the ‘estimated net or residual impacts’ following adaptation (Smit and Wandel 2006: 284), or ‘impacts minus adaptation’ (Schipper 2006: 88), it exists where ‘impacts exceed adaptations’ (Grove 2014b: 202). In other words, the extent to which communities might be described as vulnerable reflects both the scale of impacts and, ultimately, the extent to which communities can be said to lack the optimal level of adaptive capacity (Kelly and Adger 2000).

This approach represents a departure from the assumption that adaptation automatically and necessarily occurs. In light of the impacts of anthropogenic climate change, it is suggested here that the ability to adapt demonstrated throughout historical climatic changes does not *necessarily* translate into adaptive capacity for future climate change. It could no longer be assumed, in other words, that the various strategies and forms of knowledge that have enabled people to adapt to historical climatic change are the same as those demanded by future change (Amundsen 2012; McIntosh, Tainter and McIntosh 2000; Orlove 2005; Adger et al. 2011a). Adaptation would thus become an object of governmental intervention that includes steps to assess vulnerability and apply measures to

reduce it where necessary. This early mode of vulnerability analysis drew heavily on established modes of risk assessment and management, including the natural hazards school in geography mentioned above, with its emphasis on purposeful adjustment (Bassett and Fogelman 2013; Nelson 2011; Jones and Preston 2011). Its focus was initially on identifying and quantifying biophysical impacts, leaving the nature of adaptive capacity relatively unexamined. The scientific infrastructure increasingly institutionalised in the UNFCCC and IPCC frameworks was better equipped initially to investigate these impacts, with the sparse social analysis of the 'human dimensions' research programme contributing little more than an economic rationalism.

Thus extending the technocratic approach employed in the management of mitigation efforts outlined above, it was maintained that the prediction of impacts would allow appropriate strategies to be devised. Similarly premised on the assumption inscribed in the function and structure of the IPCC that scientific demonstration would lead to appropriate political action (Beck 2011), adaptation planning took the form of anticipating the nature of the adaptation response required through analysis of scenarios of future climate change. This is the 'predict-then-act' strategy that characterised traditional risk management (Dessai et al. 2009), which involves calculating the probabilities of future projected loss, weighing up the costs and benefits of action against inaction, and taking steps to avert or minimise loss. The adaptation options proposed took the form of technological and infrastructural measures, such as seawalls and alternative crop cultivars, as well as individual behavioural change, such as livelihood diversification. A key part of this approach is seen to be the communication of climate science to both government decision-makers and the public, through the provision of a 'simple, correct mental model' of climate change (Bostrom and Lashoff 2007: 39).

This planned or anticipatory adaptation was contrasted with autonomous or reactive adaptation, with the latter defined by the IPCC not as 'a conscious response to climatic stimuli' but rather as an unplanned response 'triggered by ecological changes in natural systems and by market or welfare changes in human systems' (IPCC 2001b: 982) that reflected the human ecological models of natural adaptation described above. This conception of reactive adaptation was rejected

as inadequate on the grounds that it is ‘less efficient, more costly, and more prone to failure than planned adaptation’ (Preston et al. 2015: 478). The Stern and the Garnaut reports in the UK and Australia, respectively, made the case, for example, that it is better to pay fewer costs now than more costs later, a logic that goes against the grain of natural ecological response to climate change. Adaptation was also initially seen as something planned in the sense that it necessitated guidance and direction, in contrast to autonomous in the sense of self-organised or bottom-up adaptation. Local adaptation initiatives were also viewed as suboptimal, in part due to their conflation with reactive adaptation (cf Walker et al. 2010). Instead, what was required to facilitate optimal adaptation responses, according to this early risk management approach, was coordinated policy intervention.

Climate change thus came to be governed as something which people must actively confront and deliberately prepare for (IPCC 2014). In other words, having moved away from its origins as an autonomous evolutionary process, adaptation was taken to be a matter of risk management and crucially an object of research and governance in the UNFCCC and IPCC frameworks. The risk management approach described in this section, while still evident in the research and practice of adaptation, soon came under challenge, however, and has been joined and to some extent displaced by the other ways of conceiving adaptation that I explore in the following sections. Perspectives from the developing world and the social sciences pointed out that there was no room for non-climatic sources of vulnerability in this picture and that the nature and distribution of adaptive capacity in the local community was effectively left unquestioned or treated as being of little interest. Indeed, in these respects, these critiques suggested this early approach to adaptation had not moved far enough away from its origins, retaining from the early cultural ecological and ecological anthropological conceptions the idea that the impact in question consists of an external, biophysical threat that can unexpectedly arise to disturb an otherwise necessarily functioning community. In addition to these critiques, this traditional risk management approach has been called into question in light of a growing appreciation of the uncertainty of climate change – ‘in the sense that it will exceed present knowledge’ – as well as its indeterminacy – ‘in that perfect

knowledge is impossible' (Anderson 2010: 780). Increasingly the question of 'whether capacity is sufficient to undertake the necessary adaptation' (Schipper 2006: 86) has been brought to the fore as the most relevant and pressing one, laying the ground for the discourses of vulnerability and adaptive capacity that have followed.

### **3.3 Critical understandings of vulnerability and adaptation**

Destabilising the prevailing systems ecological approaches in geography and anthropology, critical perspectives from within the natural and social sciences have underlined the social and political nature of adaptive responses to climate change – including the politics of the knowledge with which the problem is constructed in the first instance. From among these perspectives have been launched critiques of the constructions of human adaptation as a natural, automatic process and as the technocratic management of an external threat. In this section I outline how a number of these critical lines of thinking have pushed towards what might broadly be characterised as an historical perspective of human adaptation. Together these have formed the basis of new ways of conceiving of vulnerability and the task of adaptation governance in the context of climate change, which I refer to as a contextual discourse.

#### *Redrawing the boundary between the natural and the social*

In recent decades broad shifts in both the natural and social sciences have been set in train that have directed attention to the history, change and agency in the interaction of living populations and their environments. These shifts are associated with the series of developments that might be cumulatively referred to as 'chaos theory' in the natural sciences and, in a number of somewhat parallel thrusts, as postmodernism in the social sciences and humanities (Hayles 1990). Common to these shifts is a turn away from, or modification of, earlier totalising theoretical programmes towards an exploration of the possibilities of 'fractured [...] modes of analysis' and disorder (Hayles 1990: 2). Established understandings of the nature of knowledge, including the modern scientific assumption of the independence of the object of knowledge from the ways in which it is known, have been called into question across a range of disciplines, including physics (Capra 1988; Prigogine and Stengers 1984), anthropology (Merleau-Ponty 1960)

and STS (Haraway 1988). With these and other interventions, the modernist distinction of nature from society has been discarded (Braun and Castree 1998). Viewed together, these developments have lent thinking about human engagement with the environment an appreciation of complexity and of contingency, including the contingency of the perspective from which the world is viewed.

A number of these discursive currents feature a different way of conceiving of temporality to that of the evolutionary theory that had underpinned early thinking about human adaptation. In the context of a renewed sense in physics that the universe has a history (Prigogine 1988), developments in the study of non-linear thermodynamics suggested that change in physical systems, driven by 'time's arrow', is irreversible and directional (Prigogine and Stengers 1984). The gradualist, mechanistic model of Earth history and evolution was challenged by one of punctuated equilibrium (Brooke 2014). In ecology, mounting empirical evidence that ecosystems do not in fact return to equilibrium after disturbance, as previously assumed, saw the equilibrium paradigm and the imaginary of a 'balance of nature' give way to a 'new ecology' focused on the dynamics of systems far from stability (Botkin 1990; Scoones 1999). The new ecology represents a critique of the 'mechanical regularity' of mid-twentieth century systems ecology, including the homeostatic conception of human adaptation it underpinned (Zimmerer 1994; 1996). In a shift that aligns with, but is broader than this ecological critique, the ahistorical or synchronic analysis of the states or cycles of human societies in geography and anthropology can be said to have been displaced to at least some extent by diachronic analysis, or an interest in process and history (Orlove 1980).

These broad shifts have also seen greater attention to the role of both human and non-human agencies in driving and responding to environmental change (Zimmerer 1994). From within evolutionary biology, Levin and Lewontin challenged the prevailing 'variational' view that underpinned the principle of natural selection that 'the organism [is] the object [...] of evolutionary forces' that select for traits, instead proposing an historical 'transformational' perspective in which 'the organism participates in its own development' by shaping its milieu and therefore the conditions of its evolution (1985: 87). With a growing



appreciation of the mutual constitution of human societies and their environments, and of the scope of human agency to influence the forms of engagement with environmental conditions, the study of human engagement with environmental change in geography and anthropology has 'increasingly focused on decisions and choices made by individuals faced with new or changing circumstances' (Lees and Bates 1990: 139; Head 2007). These developments respond to the charge that 'change could not be explained' in the systems ecological concept of adaptation (Zimmerer 1994: 112).

A key element of these shifts in thinking about the interaction of humans and their environments has come from within geography, and in particular a body of work by Michael Watts (1983b), Piers Blaikie (1985) and others in the 1970s and 1980s that would come to be known as political ecology. With an understanding of nature and society as 'dialectically constituted' (Watts 2016: 339), it developed a political-economic analysis of the uneven distribution of the environmental risks and benefits which give rise to the inequalities and marginalisation that can be observed between and within human societies (Robbins 2004). It showed how prevailing understandings of vulnerability and approaches to managing risk privilege the biophysical and proximate factors at play in a situation of hazard, at the expense of the social or structural nature of vulnerability. In a direct critique of the natural hazards school, political ecologists maintain that 'the natural forces that are present in any environment have enormous power to affect society; but it is society that actualizes the potential of a hazard' (Oliver-Smith 2013: 19). They have also argued that the emphasis on maintaining the functioning of the social unit contained in the cultural ecological concept of adaptation is politically conservative in its interest in perpetuating – rather than understanding and overcoming – the 'normal' conditions that might have given rise to vulnerability in the first instance (Susman et al. 1983). In these ways this scholarship has drawn attention to the politics of the ways in which environmental threats are both conceived and governed.

In a similar vein, STS scholars working on the co-production of authoritative knowledge and of processes of social and political ordering have offered a constructivist critique of the ways in which scientific knowledge is produced and used in engagement with environmental issues. Insisting upon the ineluctably

social and contingent nature of the scientific enterprise, this scholarship has explored how engagement on the issue of climate change is shaped by the terrain of frequently uneven and complex – but most importantly, invariably political – relations in which climate science is both generated and encountered by various actors. It highlights the political work done by the demarcation of science from political considerations, which are considered ‘irrelevant to the scientific task at hand’. This is an assumption that permeates the frameworks of engagement on climate change to date (Demeritt 2001: 321) and the tacit distinction between the *facts* housed in science and the *values* seen to be isolated to the political and cultural realms (Jasanoff 2010). STS scholars have developed this critique by exploring the manifestation of the fact-value distinction in the dualism often constructed of authoritative expertise on the one hand, and lay or vernacular knowledge on the other. In the context of climate change this lay-expert distinction forms the basis for the ‘information deficit model’ manifest in the initiatives designed to communicate climate science to public audiences. The assumption here is that the general public lacks the requisite knowledge to make sense of climate change, and that this information and knowledge deficit must be remedied (Wynne 1993; Irwin and Wynne 1996; Sturgis and Allum 2004). Instead of viewing knowledge as a neutral tool employed by powerful actors, STS scholarship explores the political commitments implicit in scientific modes of knowing. It joins feminist, postcolonial, development and other critique to form the basis of calls for democratisation and participation in the sphere of climate change as in others.

While by no means do these shifts constitute a coherent or consistent theoretical programme, together they have made possible a reconceptualisation of adaptation as a contingent process and of its achievement as a product of human agency, situating vulnerability and adaptation firmly in ‘human historicity’. They saw the fields of cultural ecology fall out of favour by the 1990s (Zimmerer 1996) and ecological anthropology significantly revised (Orlove 1980; Abel and Stepp 2003). They have also seen the emergence of new approaches in the climate change context, as I describe in the following section, which have joined and offered an alternative to the predominant biophysical risk management paradigm. However, the emergence of the new, non-equilibrium ecology and its integration

of some of these insights about complexity and contingency has also made possible a resurgence and extension of systems ecological thinking, and with it the discourse of adaptive capacity, as I explore in the final section of this chapter.

#### *A contextual discourse*

The shifts described above have provided fertile ground for new approaches to adaptation to emerge. These perspectives, which might be characterised as constituting a ‘cultural turn’ in the study of climate change, call for more attention to the political, economic, moral and cultural dimensions of climate change (Yusoff and Gabrys 2011). Climate change, no longer framed as an exclusively environmental issue, became from this point a social issue, with vulnerability determined by conditions that pre-exist and are independent of biophysical impact. A range of local, lay and other alternative actors and voices have been ushered into discourses of climate change, with non-state actors responding to climate change in a variety of ways and at multiple levels from the community to the international regime (Bulkeley and Newell 2015; Bulkeley 2016). As I discuss in more detail below, these shifts have formed the foundation of a radically different framing of what it means to address vulnerability and advance adaptation, and of a governmental vision associated with what I refer to as a contextual discourse of vulnerability and adaptation.

These new ways of thinking about climate change response have been prompted in part by a recognition that the singular scientific and technocratic formulation of climate change that established and dominated the spheres of international climate change research and governance has failed because it ‘ignores the human dimensions of the problem’ as well as of the solutions (Cohen et al. 1998: 342). Research on the human dimensions of climate change had, prior to the shifts described above, taken little interest in culture, with environmental problems initially defined and investigated by the social sciences only in terms of human behaviour (Cohen et al. 1998). In the biophysical risk management discourse, which was concerned with knowledge dissemination and individual behavioural change as described above, insofar as culture was attributed any significance at all, it was treated as ‘a kind of catch-all context representing the human specificity of the place being studied’ (Proctor 1998: 231; Shove 2010).

Attention to the complexity and specificity of the contexts in which people experience and respond to climate change has seen revised modes of engaging communities in both mitigation and adaptation. Critical perspectives from STS and other areas of the social sciences and humanities, have generated ‘a more complicated picture than that portrayed by rational actor models and the associated “linear” understanding of policy uptake and societal benefit as automatic consequences of the production of scientific knowledge’ (Lahsen 2010: 162). The information deficit model of science communication has thus been challenged on the grounds that, as noted in the 2014 IPCC report, it does not adequately address the diverse contexts within which climate decisions are made’ (Jones et al. 2014). In its place in adaptation governance is a participatory model that investigates ‘what constitutes threat, risk and change in local environments according to local people’ (Veland et al. 2010: 199). This attention to local understandings of climate change appears to be consistent with the insights of STS scholars that have shown that a lack of expected response to scientific information – which had previously been attributed to various ‘cognitive biases’ on the part of wayward publics – in fact ‘may represent a legitimate rejection of science on many grounds different from technical ignorance’, including a lack of trust, a perception of irrelevance and a different model of social agency (Jasanoff and Wynne 1998: 40). Communities are now widely referred to as essential participants in the production and sharing of knowledge about what adaptation is to mean in any given locality, reconfiguring the traditional distinction between experts and lay publics.

The critical perspectives outlined in the previous section, and this attention to the contexts in which the impacts of climate change are experienced, have also contributed to revised understandings of what constitutes vulnerability. The theory and practice of adaptation has turned, in an approach centred on what has been referred to as ‘contextual vulnerability’, from the narrow assessment of biophysical risk to the social, economic, cultural and other non-climatic drivers of vulnerability (O’Brien et al. 2007; Eakin and Luers 2006). In line with the political ecological critique described above, this approach maintains that vulnerability is defined by circumstances that pre-exist the environmental impact, manifesting in people’s lives in diverse ways (Liverman 2009). With the nature and extent of

vulnerability understood to differ within and between societies, it is argued that different levels of vulnerability to the same climatic risk 'can often be traced to histories of inequitable trajectories of development and differential access to power and resources' (Lemos et al. 2013: 443). It is considered to be a dynamic 'state or condition of being' (Eakin and Luers 2006: 370) that is associated with the 'characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist, and recover' from the impacts of climate change (Wisner 2004).

With vulnerability situated in human history in this way, the process of adaptation has been redefined in terms of development – a reframing driven in significant part by voices from developing countries, which have played an important role in placing adaptation on the UNFCCC agenda since the 1990s (Mace 2006). Highlighting differential vulnerability to climate change impacts in addition to differential responsibility for causing it (Ayers 2010; Schipper 2006) among the parties to the Convention, developing countries have demanded the transfer of compensation and support for adaptation, typically in the form of what are referred to as capacity building, technology transfer and finance (Mace 2006). It came to be widely argued that, in developing communities, addressing wider development imperatives is essential to achieving successful adaptation, and that in fact either undertaken without reference to the other could undermine both (Ludi et al. 2014; Kok et al. 2008). This led to widespread calls for adaptation to be integrated with, or mainstreamed into, development institutions and programmes (Smit and Wandel 2006; Eriksen and O'Brien 2007; O'Brien and Leichenko 2007; Adger et al. 2003; Lemos et al. 2007) in what has been advocated in an IPCC report as a 'triplewin' approach to adaptation, mitigation and sustainable development (Jones et al. 2014: 214). Therefore, where adaptation had initially been constructed in the UNFCCC sphere as a process that could be taken for granted, it later became 'a synonym for development' (Schipper 2006: 91).

The idea that vulnerability is determined not by the nature of climate change impacts, but by people's access to the means to prepare for them, has been importantly influenced by work on the role of entitlements in achieving adequate livelihoods in international development research and practise (Adger 2006). This interest in livelihoods, which emerged in the 1980s in association most

prominently with the work of Robert Chambers, is premised on the need for close attention to the realities of life in any given locality, listening to 'where people are, what they have, and what their needs are' (Chambers 1988: 1) as the starting point for any intervention. This goes beyond the 'basic needs' approach previously popular in international development by taking into account the assets that people already possess to enable them to achieve 'satisfactory levels of living' (Sabates-Wheeler et al. 2008: 55). These assets were theorised by Amartya Sen as 'entitlements' in his analysis of food security and, in particular, the centrality of questions of access to food, rather than availability of food *per se*, in explaining the dynamics of famine (Sen 1981; 1984). The sustainable livelihoods approach (Chambers 1988), which became popular around the publication of the Brundtland Report, incorporated questions of sustainability, vulnerability and coping in the face of shocks (Scoones 2009). Here vulnerability is understood in terms of the undesirable outcomes that arise through 'loss of a valued asset' (Ribot 2013: 179), and adaptation as a process of making adjustments to enhance livelihood possibilities. In this paradigm of development, adaptation was understood, in other words, as a process of expanding access to the resources required to respond to environmental pressures. This is an important point because further shifts in community development thinking have seen adaptation since redefined in the discourse of adaptive capacity, as I describe in the following section.

Through the many developments in adaptation scholarship and practice described in this section, adaptation discourses have been widened considerably beyond its initial governance in the context of climate change through biophysical risk management. The thrust of these ideas, if viewed together, was to place the human community, rather than the climate change impact, at the centre of analysis. Here adaptation is conceived as an historical process that is a function of the contingent factors at play in the context in which it occurs. This represents, I argue, a qualification of the construction of the human in biological terms that defines the biopolitics of adaptation. These perspectives have therefore opened up questions around how the process of adaptive change in human communities is to be explained, and made explicit the issues of culture, knowledge, politics and agency that had been left unproblematised by previous discourses. In this context,

an approach to adaptation practice as a form of community development, representing an alternative rationality of the government of adaptation, could become a powerful discourse for a time, especially in the early years of this century. The following section describes how many of these ideas have been further extended and to some extent revised with the discourse of adaptive capacity – which has seen the discourse of adaptation as development in the sense I described here lose some of its hold.

### **3.4 The turn to adaptive capacity**

Elements of the preceding ways of approaching adaptation can be discerned in current thinking and practice of adaptation, but the latter has also diverged from them in several important respects in what has been termed a ‘turn to capacity’ (Eakin 2014). I argue that this is best understood as a discourse that, while by no means completely internally coherent, constitutes a distinct mode of the biopolitical governance of adaptation. This mode of climate governmentality takes as its primary object the cultivation of the existing capacity of the adaptive subject. It has become particularly powerful because of the ways in which it can be seen to represent attempts to address the limitations and avoid the pitfalls of previous discourses. As I describe in this section, it does so by combining key insights and elements of the early systems ecological understandings of human adaptation in geography and anthropology, as well as the biophysical and development approaches, into the integrated discursive framework of the social-ecological system, reflecting the ‘pragmatic holism’ with which the ecological system was originally conceived in the first half of the last century.

#### *Pragmatic holism*

The concept of adaptive capacity, it is argued, can serve as a ‘fundamental organizing concept’ to theorise ‘the political-social-cultural-economic context within which adaptation (and mitigation) decisions will be made’ (Yohe 2001: 249). This concept is at the centre of the discourse of adaptive capacity, in which adaptation is conceived in terms of the relationship of humans and the environment within what is referred to as the coupled social-ecological system, and studied using integrated approaches, including both quantitative and qualitative analysis and a variety of research methods, including via the

participation of local communities (Eakin and Luers 2006: 374). In these and many other respects that I explore throughout this dissertation, this discourse reflects the spirit of integration of the concept of the system. This discourse draws on key systems ecological concepts old and new, returning in some senses to the early theorisation of human adaptation of cultural ecology and ecological anthropology (Watts 2015). It is a perspective revised, however, away from the assumptions of the equilibrium paradigm of ecology, to instead stress the possibility of change – a type of change increasingly constructed, as I describe below, as nothing short of ‘transformative’. The discourse of adaptive capacity is also influenced by the social scientific critique outlined in the previous section and incorporates various concepts from the social sciences, including institutions, social capital, leadership and learning, values, norms, beliefs and human agency (Berkes and Ross 2013; Miller et al. 2010; Feola 2014: 376-7).

The concept of adaptive capacity as it appears in this context is shaped significantly by the concept of resilience applied in the ecological sciences since the 1960s and 70s, where resilience refers to the ability of a social and ecological system to maintain healthy function despite external disturbance. Resilience is defined both in the study of social and ecological systems and more recently in the reports of the IPCC in terms of three aspects: functional persistence, self-organisation and adaptation – with the last typically understood as a function of social learning. On the definition of the Fourth Assessment Report of the IPCC, a system can be said to be resilient when it can ‘absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change’ (IPCC 2008: 880). All three of these aspects of resilience play a part in shaping the way that climate change adaptation is pursued, and because of this the adaptation process tends to be treated as synonymous with that of building resilience (Pelling 2011; Folke 2006). In discourses of climate change, adaptive capacity and resilience are often treated as synonymous with one another, and both in turn are treated as antonyms of vulnerability: ‘all other things being equal, a system that has more adaptive capacity will tend to be less vulnerable’ (Smit and Wandel 2006: 286).

The concept of adaptive capacity is also influenced by an attention to the role of livelihoods and entitlements made possible by the actor-focused lens of human



security, as described in the previous section. With this lens, the concept of adaptive capacity directs attention to the idea 'that the mere existence of adaptation options does not mean that every vulnerable community, sector or country has access to these options or is in a position to implement them' (Klein et al. 2005: 580). This perspective means that adaptation must then be about 'addressing the political, cultural and socio-economic factors that may promote or inhibit individuals and groups from adapting' (Berger et al. 2014: 22), and in this sense extends the concerns and priorities of the discourse of adaptation as development.

Even though the definitions and perspectives of contextual vulnerability and resilience scholarship do not align with one another entirely coherently and unproblematically (Miller et al. 2010; Engle 2011), it has been argued that the concept of adaptive capacity can serve as something like a theoretical bridge between two areas of research that are converging in 'their prioritization of management, governance, and institutions' in 'fostering sustainable adaptations in the face of climate change' (Engle 2011: 652). Advocates claim that 'gains could be achieved by attempts to link the ecological and social sides within one framework [...] permit[ting] a more robust explanation of adaptive capacity as a form of human nature or behaviour' (Fennell and Plummer 2010: 247), where the attention to agency that features in more 'actor-based' approaches can be united with a systems perspective (Engle 2011). 'The reconciliation of actor- and system-oriented approaches' is therefore seen to 'represent [...] a major challenge in this domain' (Nelson et al. 2007: 399).

Such proposals to integrate useful elements of different theoretical perspectives on adaptation reflect the 'pragmatic holism' of systems ecology that I introduced in Chapter 1. This pragmatic holism sees the gaps and shortcomings of the discursive framework of the social-ecological system patched over with the integration of the critical insights outlined above about the social and political nature of adaptation, even superseding them where the development approach is considered inadequate, within a reconceived understanding of the social dimension of the social-ecological system. This approach seeks an effective adaptation response that promotes the sustainability of social, ecological and economic systems, as part of a biopolitical project the social-ecological system as

a motif of environmental governance from the community to the Earth. In this integrative discourse and its embrace of the idea of adaptive capacity as unambiguously positive, for 'a system simply cannot have too much of it' (Engle 2011: 652), the differences between the development and resilience fields, and between the discursive elements drawn from each, are blurred. As I discuss in Chapter 8, the politics of this holistic approach itself is obscured and what it means for the governance of life, as it was when the ecological system was first conceived, in the clamour to realise its 'pragmatic' benefits.

### *Building adaptive capacity*

An important element of the discourse of adaptive capacity is the concern, with emerging insights about the instability of the Earth system and the non-linear and potentially irreversible nature of climate change impacts, that climate change might present more sudden and dangerous impacts than previously anticipated (Schneider 2004; Rockström et al. 2009). I describe in this section how a growing and pervasive sense of uncertainty both about 'the magnitude of changes in ecosystems upon which people depend and [...] about the capacity of social systems to adapt to these changes' (O'Brien et al. 2010: 49) is nudging the theory and practice of adaptation in new directions. As I explain below, this has led to a qualification of some of the commitments of the approach described above that proposes to mainstream adaptation into existing development efforts, as it is maintained that efforts should be directed to investing in building and maintaining adaptive capacity rather than in material development outcomes. At the same time, reflecting the critical insights that connected issues of adaptation with those of development, adaptive capacity is framed in terms of a human agency to respond to environmental challenges that is enabled and constrained by the particular social and political contexts in which adaptation is undertaken.

A sense of the uncertainty of climate change has grown, or at least taken on a different flavour, in recent years as Earth system science has shed light on the possibility of breaching 'tipping points' and 'critical thresholds' in the climate system, which would result in the 'types of dangerous scenarios in which impacts may be sudden and irreversible' (Eakin and Luers 2006: 373). This is a revived concern about ecological limits that is evident also in a resurgence of the 'limits to

growth' thesis (Bardi 2015). The impacts unfolding in these scenarios, it is argued, would demand immediate, direct, dedicated attention. In this way the language associated with the concept of adaptive capacity echoes the biophysical risk discourse in which the climate change impact is perceived to constitute an emergency in itself, independent of social and political context. The idea of irreversibly passing a 'tipping point' seems to diverge from early temporal representations of the climate change impact as a bounded period of crisis, however, for it implies that the future will set in as a permanent, pervasive crisis. This reflects the observations of scholars of biopolitics that the discourse of the complex adaptive system in a number of areas of international security and development is associated with a mode of governance centred on the imperative to be prepared at all times for the uncertainties of the future (Anderson 2010; Dillon 2007a; Walker and Cooper 2011).

This discourse holds that because 'the precise nature of climate impacts are impossible to predict with the level of certainty required for definitive policy decisions, adaptation must manage uncertainty and foster adaptive capacity' (Berger et al. 2014: 32). 'Managing' this uncertainty involves, according to this approach, remaining cautious and, in particular, cognisant that it simply *cannot be known* whether any given course of adaptation into the future would ultimately prove appropriate and effective throughout any of the range of climatic changes and impacts that might unfold over time. Here scenarios of future greenhouse gas emissions and climate trajectories are used as a way of visualising and exploring possibilities rather than their more traditional use as a way of calculating and representing the most probable outcome (de Goede and Randalls 2009; Anderson 2010; Rickards 2013; Rickards et al. 2014). As I describe further below and in Chapter 6, this is seen to necessitate an experimental and reflexive approach to the task of adaptation.

The capacity or resilience-based approach differs in an important way from the interest in development that characterises the contextual, development-oriented approach. It has been argued that the idea that adaptation efforts ought to be mainstreamed into existing policy and development programmes applies best in 'smooth' climate scenarios, and is less applicable in 'irregular climate scenarios, because sudden and unexpected change will bring climate to the fore as an issue

unto itself in need of some response' (Yohe 2001: 251). This idea that climate change will not unfold in a linear, predictable way drives a growing concern about the potential for *maladaptation*, or adaptation that ultimately increases rather than decreases vulnerability (Barnett and O'Neill 2010).<sup>3</sup> This could come about if adaptation planning is undertaken on the basis of an incorrect projection of a future scenario, so it is now argued that adaptation measures should not be tied to any particular predictions of future risks given the significant uncertainty associated with them (Dessai et al. 2009).

More broadly there is a mounting concern that what is required to address the contextual factors that contribute to vulnerability is not the same as what is necessary build to capacity – partly because, it is increasingly argued, the skills required for the future are not those demanded by today's development challenges. The premise of a development-focused approach to adaptation, that those who are poorest and most marginalised are also those who are most vulnerable to the impacts of climate change, has been questioned (Eriksen and O'Brien 2007). It has been argued that an approach that effectively subsumes adaptation into development does not take seriously what is novel about climate change impacts and could ultimately leave communities ill-equipped to address unprecedented risks (Agrawal and Lemos 2015; Lemos et al. 2013). Given uncertainty about what lies in wait over the horizon, it is argued that focussing on action to address vulnerability in the present 'can lead to a failure to anticipate new, emergent vulnerabilities' (Eakin et al. 2009: 220). An approach that links adaptation and development has also been characterised as 'biased' and 'politically expedient' in its attention to the needs of present generations and issues of development (Eakin et al. 2009: 222), which are increasingly represented as optional and potentially dangerous luxuries. It could, it is argued, 'risk bogging adaptation policy down in the same politics of resource access and distribution that have impeded social development for decades' (Lemos et al. 2013: 439). Through these and related arguments, current thinking about adaptation has distanced itself from the development mainstreaming approach.

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<sup>3</sup> According to the typology of Barnett and O'Neill, maladaptation refers to adaptation that inadvertently increases greenhouse gas emissions, disproportionately burdens the most vulnerable, involves high opportunity costs, reduces incentives for adaptation, or precludes alternative courses of adaptation and choices available to future generations (2010).

In calling into question potentially maladaptive, redundant or futile measures to address the conditions of vulnerability of the present, discourses of adaptation have turned to the role of the *capacity* of individuals and communities to appropriately respond to a range of challenges as they arise. The target of adaptation governance has become this property of the subject of adaptation rather than the conditions that define the life of this subject. A distinction – one that is articulated sometimes explicitly but more frequently implicitly – has accordingly emerged between *undertaking 'adaptation'*, defined as implementing 'operational adaptation decisions' (Adger et al. 2005: 79) to 'address [...] a given set of changed circumstances', on the one hand, and '*building adaptive capacity*', defined as 'enabling people to live in an ever-changing and unpredictable future', on the other (Berger et al. 2014: 32). Adaptation is now understood primarily no longer as the former, but rather more in terms of the latter, meaning that it is possible 'even if we cannot predict exactly the form of that particular adaptation [action]' (Yohe 2001: 252).

Adaptive capacity is therefore considered to be amenable to intervention through the cultivation of a range of determinants: economic resources, information and skills, technology, institutions, social capital and trust, natural resources, and equity (Smit and Pilifosova 2001; Yohe and Tol 2002; Brooks and Adger 2004; Smit and Wandel 2006; Moser 2009). These determinants form the basis of an 'ability to [mobilize scarce resources] to anticipate or respond to perceived or current stresses' (Berger et al. 2014: 22). Adaptive response to such stresses can include intervention to ameliorate vulnerability associated with the other dimensions of the IPCC definition of vulnerability, exposure and sensitivity, by influencing both biophysical and social conditions (Engle 2011; Eakin and Luers 2006; Lemos et al. 2013; Yohe and Tol 2002). A society with high adaptive capacity has the resources to install irrigation systems to reduce exposure and sensitivity to drought, for example. Importantly, adaptive capacity also represents the potential to reflexively act upon itself by manipulating its own determinants. For this reason, adaptive capacity is constructed in this discourse as self-perpetuating, with adaptive societies investing in further adaptive capacity because they – effectively by definition – place a high premium on things like 'good governance' and education.

As I discuss below, the potential of adaptive capacity to enable the adaptive subject to act deliberately and strategically in the face of climate change impacts, including by acting on its own determinants, reflects the centrality of agency in this discourse. The distinction between undertaking adaptation and building adaptive capacity is analogous to the distinction that Amartya Sen draws in his theory of human development between ensuring *entitlements*, as the process of development, and building *capabilities*, as the process of cultivating the agency to engage in development. By supplementing his concept of entitlements with that of capabilities on the grounds that access to resources alone was not enough, Sen theorised the role of human agency in utilising these resources. Including a concept of agency in this way made it possible, scholars have argued, to explore the role of capabilities in furthering other valued goals beyond achieving certain standards of living and personal well-being (Burchi and De Maro 2012). The role of adaptive capacity in similarly identifying and pursuing valued goals in the context of climate change has become crucial to this emerging discourse, as I explore below and throughout the dissertation.

#### *The 'natural scale'*

I argue that the discourse of adaptive capacity is shaped by the contextual discourse before it and in various ways can be seen to attend to the social and political dimensions of adaptation. It interprets these dimensions in the terms of the social-ecological system, however, and in conceiving the prospects for adaptation turns to the internal dynamics of the adaptive system, or 'the inner world' of the adaptive subject, for it is here that vulnerability and adaptive capacity is understood to reside. As is proposed in the theories of adaptive management and governance, the discourse of adaptive capacity 'realign[s] decision-making to *the natural scale*' (Engle 2011: 652; emphasis added), recuperating a sense of the autonomous adaptation of early cultural ecological and ecological anthropological theories. Importantly, as I describe below, this 'realignment' represents a move away from the construction of adaptation in both the biophysical and contextual discourses – although in rather different senses in each – as 'something that is orchestrated, if not imposed' (Tschakert and Dietrich 2010: 11) that consists in 'a series of planned interventions, discrete

events initiated from outside or by governments' (Brown 2011: 26). It instead emphasises the role of the active subject in driving adaptation.

Where, in traditional development discourses, objectives such as good governance or education were taken to be universal, adaptive capacity is understood to consist in intrinsic, already existing properties that are unique to the adaptive subject. Karen O'Brien and colleagues see this shift as part of nothing less than 'a change in the way we think about change [...] towards a framing that recognises and prioritises the capacity of individuals and communities to both respond to and create change, including envisioning and pursuing alternative futures' (O'Brien et al. 2010: 4). The reframing of vulnerable populations 'as active agents of change with particular skills, knowledges, and visions, rather than as passive agents' (Tschakert and Dietrich 2010: 14) is considered an empowering one. Derived from the ecological science of resilience, where diversity is considered essential to ecosystem function (Holling 1973), this discourse not only accommodates but celebrates diversity, highlighting the value of the range of knowledges and experience that diverse subjects of adaptation bring to the task.

A core interest in this discourse lies in what is valued by the subjects of adaptation themselves. This is characterised by Karen O'Brien and Johanna Wolf as a shift beyond not only a traditional biophysical risk management approach, but also the materiality of the contextual discourse, to what they call a 'values-based' approach (2010). 'People are vulnerable to the extent that climate change influences not only their objective, exterior world, but also their subjective, interior world' (2010: 232), they argue. It is also in this inner world of the adaptive subject that adaptive capacity is understood to reside, where it is considered to be determined in large part by the affective factors that shape whether and how well individuals and communities can marshal resources to tackle a problem, including the extent to which they believe their adaptive capacity to be adequate (Grothmann and Patt 2005).

This approach responds to calls to move beyond the focus on the individual as a lone, autonomous actor that has dominated the economic and psychological contributions to the study of the human dimensions of climate change (Davoudi et al. 2012). It instead takes a relational perspective, locating the individual within

a community or network, which is cast in this discourse as a system. In this sense, it is consistent with the attention to social context of the critical perspectives I refer to as the contextual discourse. However, it understands this context in ecological terms, with adaptive capacity taken to exist in 'linkages and the quality of the relationships within systems' and the interconnected dynamics of feedback to which they give rise (Nelson 2011: 114). The capacity of the system to adapt is determined by its ability to function cohesively as a whole. This is referred to in the theory of the social-ecological system as the self-organisation of the system, which includes its capacity to regenerate after disturbance (Folke 2006). It is described in work on community resilience in the health and psychology literatures as 'the capacity of a community to come together to work toward a communal objective' (Berkes and Ross 2013: 6). In the adaptation literatures it is frequently connected to the concept of social capital, and associated with trust and norms (Adger 2000; Nelson et al. 2007). This relational understanding of the resilience or adaptive capacity of the human system forms the basis for the governance of the adaptation through the construction of the self-organising community, as I argue in Chapter 5.

With adaptive capacity understood in these ways as a function of the dynamics of the social-ecological system, the realignment in the discourse of adaptive capacity to the 'natural scale' takes adaptation to be autonomous in both temporal and spatial terms. The temporality of adaptation is cast as processual, and it is constructed as 'a continuous stream of activities, actions, decisions, and attitudes' (Nelson et al. 2007: 397). This can be seen in the distinction drawn between building adaptive capacity and taking adaptive action that I described above, viewing adaptation 'not in light of specific activities but rather in how these feedback, either positively or negatively, into the system as a whole through time' (Nelson et al. 2007: 399). The process of adaptation advances as 'individuals and households undertake spontaneous incremental and continuous adaptation, integrated with and balanced against other livelihood adjustments in the face of multiple stressors' (Brown 2011: 26). It is one of continuous experimentation through the provisional application and evaluation of adaptation options – an approach which, as I described above, is considered particularly crucial in the face of potentially abrupt and non-linear climate change impacts.



At the spatial scale, the discourse of adaptive capacity rejects, like the contextual discourse, the planned approach of traditional, top-down environmental governance, instead looking to the role of household or community in their own adaptation. In this sense it is consistent with the emphasis on participation in community development models of adaptation. It diverges from the contextual discourse, however, in constructing the role of the adaptive subject in systems terms, with the individual, household or community always understood as part of a yet wider system. This wider system is seen to be characterised by 'nested dynamics operating at particular organizational scales', for example, 'households to villages to nations, trees to patches to landscapes' (Walker et al. 2004: 6). In this way it represents a qualification of the focus on the autonomy or self-organisation in earlier constructions of the system as local and bounded, which had come under some criticism (Davoudi et al. 2012). It takes a broader, more fluid view of the factors that generate and constrain adaptive capacity on the grounds that 'while all adaptation is local, *adaptive capacity is not*' (Lemos and Tompkins 2008: 60; emphasis added).

This interest in the spatial and temporal dynamics of the social-ecological system, and their 'cross-scale effects', defines the discourse of adaptive capacity. It is the basis of analyses of how vulnerability and adaptive capacity are 'nested' in 'local history, social relations, and place' as well as 'interdependent with processes manifest at higher scales' (Adger et al. 2009c: 151). This is in line with critique of earlier approaches, including political-economic critique that directed attention toward structural issues – although, with its emphasis on intrinsic adaptive capacity realised through self-organisation and the unique, subjective values of the subject, this discourse paints a very different picture of the social to that associated with the development approach above. In line with the 'new ecology', the discourse of adaptive capacity also responds to the charge that ecological understandings of adaptation were too preoccupied with the stability implied by resilience – opening up the potential for transformative change in the system, as I discuss in the following section.

#### *Transformative adaptation*

In the last few years a call for transformation has entered the scholarship and policy of adaptation (Pelling 2011; O'Brien 2012) as an enthusiastic insistence on the possibility and necessity of change, including changes to unsustainable fossil fuel consumption and to the conditions that generate climate change vulnerability. Karen O'Brien argues that the idea of transformation responds to the failure of the current framing of climate change adaptation to

'engage with the real "adaptive challenge" of climate change, i.e. a questioning of the assumptions, beliefs, values, commitments, loyalties and interests that have created the structures, systems and behaviours that contribute to anthropogenic climate change, social vulnerability and other environmental problems in the first place' (2012: 668).

Defined by the IPCC as 'the altering of fundamental attributes of a system' (IPCC 2012: 564), it reflects the critique of the contextual discourse that vulnerability is defined not so much by external disturbances but by the conditions within a system that mediate the experiences of people within it. It is also consistent with an understanding that the prospects for adaptation are shaped by the social and political contexts in which it occurs, meaning that where 'the constraints of the broader economic-social-political arrangements' do not allow adaptation as adjustment *within* these constraints, the constraints *themselves* must be changed (Smit and Wandel 2006: 289). This vision of transformative adaptation, and the constructions of human agency and politics that accompany it, are all crucial features of the discourse of adaptive capacity. I argue here that they represent an attempt to acknowledge and accommodate the political dimensions of adaptation within a fundamentally biological perspective, reflecting the pragmatic holism that defines the discursive framework of the social-ecological system.

The focus on transformative change in the discourse of adaptive capacity is made possible by a theorisation of the spatial and temporal dynamics of the social-ecological system discussed in the previous section, and a reframing of the study of resilience away from its earlier association with functional persistence. While Holling's influential work on resilience highlighted the potential of ecosystems to move between multiple stable states and contributed to the shift away from the

equilibrium paradigm of mid-twentieth century systems ecology (1973), resilience has come under wide critique for its emphasis on the functional persistence of the living system. Defined as 'the amount of disturbance that can be sustained before a change in system control and structure occurs' (Holling and Gunderson 2002: 28), the concept is seen to 'privilege recovery over fundamental change' (Jerneck and Olsson 2008) by focusing on how the system 'bounces back' from an external disturbance to a state of stability – a state of equilibrium problematically assumed, critics claim, to be desirable (Brown 2014: 109; Gallopin 2006). Theorists of the social-ecological system have more recently stressed the potential for 'renewal, re-organization and development' in these systems (Folke 2006: 253), with a recognition that resilience is not an inherently positive property that necessarily tends towards the most desirable state.

The possibility for positive transformation is theorised in the scholarship of the social-ecological system as a shift between states that occurs through the cross-scale dynamics of this nested system, or what is referred to as the 'panarchy'. In this structure, in which the nested levels are interlinked in continual adaptive cycles of growth, change is understood to emerge from the 'faster, smaller' level of the individual unit, while stability tends to be provided by the 'larger, slower' levels of institutions and other structures (Holling et al. 2002b). The push for change from below is framed in terms of the innovation and experimentation made possible by 'novel entrants' in the form of creative ideas, inventions, and so on, which are treated as analogous to mutated genes in the case of organisms (Holling et al. 2002b). The interaction between the levels are seen to account for the 'two interacting sides of resilience as both sustaining and developing' (Folke 2006: 254) – and, ultimately, how the living system achieves survival. Holling and colleagues find corroboration in the work of Stewart Brand, pioneer of the ecological 'Whole Earth' discourse, who argued that 'continuity and perpetual renewal go together', with sustainability consisting in an approach that 'embraces all levels' from 'glacially slow Nature' to human 'fashion' (Brand 1999: 53 and 120). This theory represents an attempt to theorise change of all kinds – whether social, economic, political or cultural – all in the terms of a common discursive framework, one ultimately drawn from evolutionary biology.

A key part of this vision of transformative change is a 'deeper notion of political agency' (O'Brien 2015) that is seen to be necessitated by the possibility – and, indeed, inevitable necessity – of a *choice* between persistence and change. The concept of adaptive capacity itself is constructed in this discourse as the seat of this human agency, playing a crucial role in driving change. With resilience now seen to be something that 'has to be actively managed' either in favour of the status quo, or towards transformation (Yorque et al. 2002: 433), adaptive capacity is the capacity, at a step removed, to act on the resilience of the social-ecological system, 'breaking down the resilience of the old and building the resilience of the new' (Folke et al. 2010: 20). I argue that this understanding of adaptive capacity is effectively incorporated to fill the gap in a theoretical framework that would not otherwise be able to account for human choice and social change, once again reflecting the pragmatic holism of a discursive framework that includes ever more social concepts in its attempt to develop a perspective adequate in its totality. This construction of a role for human agency constitutes a central aspect of the governmentality of adaptive capacity, one which I explore further in Chapter 6.

The political context in which adaptation occurs is constructed in the discourse of adaptive capacity as the levels of the nested system with which the adaptive subject engages in building and exercising its adaptive capacity. With agency understood to be distributed throughout systems rather than isolated in traditional structures such as the state or local communities, it is argued that 'a more robust way forward could be to pursue a process of multi-scale policy harmonization' (Preston et al. 2015: 474). This construction of governance in the context of adaptation draws on the paradigms of adaptive management or governance in the theory of social-ecological systems (Folke et al. 2005). Reflecting an appreciation that 'neither purely lower-level management nor purely higher [...] works well by itself' (Berkes 2002: 239), governance in this discourse is to be neither strictly centralised nor decentralised (Hahn et al. 2008: 121). Recognising the limitations of earlier conceptions of the bounded system or community, as mentioned above, this discourse posits a role for the 'enabling environment' – another concept borrowed from the human development paradigm – to facilitate self-organising processes of adaptation at the local level. I examine the role of the enabling environment in Chapter 7 and argue that this

construction of the possibility of intervention in local processes of adaptation represents an important concession that the existing adaptive capacity of the subject may not be adequate and that governance is required to ensure its 'determinants' – those factors such as education and 'equity' that, as described above, are seen as the prerequisite conditions for the adaptive capacity of the adaptive subject. It therefore constitutes another key plank of the political rationality associated with the discourse of adaptive capacity.

With these explicit constructions of agency and governance, and the emphasis on choice and change that they make possible, an element of reflexivity is introduced into the biopolitics of adaptation. With adaptive capacity offering the means to purposively 'create untried beginnings from which to evolve a new way of living' (Walker et al. 2004: 7), the adaptive subject is governed to engage in a process of adaptive learning, as I discuss in detail in Chapter 6. In the discourse of adaptive capacity, however, processes and structures of governance are themselves also included in the field of governmental intervention upon which they are to act. They are considered to be equally subject to the 'adaptive renewal cycles' of the panarchy described above, for example. In light of an appreciation in the system theoretical literature that the environmental challenges to which governance is now seeking solutions are problems caused by those very same governance structures (Voß and Kemp 2006), it is argued that transformative potential hinges on a capacity for reflection, learning and innovation (Huntjens et al. 2012). Here the discourse of adaptive capacity draws on work in a variety of fields that have been influenced by a systems theoretical interest in the recursive dynamics of complex systems, such as the interest in environmental political theory since the mid-1990s in 'the conditions that might improve the 'reflexive learning capacity' of citizens, societies and states' (Shaw 2009: 105). More broadly, it can be seen to integrate, and attempt to respond to, some of the critical insights I discussed above about the necessity of structural change. I argue that this constitutes yet another important dimension of the governmentality of adaptive capacity: it is a reflection on the necessity of reflection, or reflexivity, within modes of governance. This political rationality underpins the integrative and participatory research and governance agendas that I discuss in Chapter 8, which I argue

reflects both progressive and pragmatic interests in changing the epistemological and political terms of engagement in the sphere of climate change adaptation.

### **3.5 Conclusion**

Through the analysis of the many discursive elements at play in climate change adaptation research and practice outlined here, I have identified what I refer to as a discourse of adaptive capacity that has come to dominate this discursive terrain at present. I situate this discourse within the trajectory of biopolitics that emerged with modern biology and its conception of the relationship of the living organism and its environment, and have shown here how climate change adaptation now understands this organism – including humans – and environment as parts of the social-ecological system. It constitutes a governmentality that constructs the possibilities for transformative adaptation within this systems ecological discursive framework, extending the concept of the social-ecological system and drawing on some of the critical insights of previous discourses to theorise the role of the agency of the adaptive subject, and of the political context within which the subject is located, in making adaptation possible.

The integration of concepts of agency and politics into the discursive framework of the social-ecological system represents, I argue, the pragmatic holism of the original ecological conception of the system in the first half of the twentieth century. The appeal of the integration of social and biological understandings of human adaptation in the construction of the discourse of adaptive capacity lies in the prospect of overcoming the perceived limitations and blindspots of each that have been identified in the attempts to theorise human adaptation of the last few decades. This pragmatism is seen as all the more necessary against the present backdrop of a growing sense of the magnitude of the challenge of responding to the unpredictable and potentially abrupt impacts of climate change to come. The discourse of adaptive capacity constitutes a programme of research and governance seen to promise the possibility of meeting this challenge.

However, I argue throughout this dissertation that – with this integration of social and biological perspectives reinscribing the ‘dual position’ within both the ‘biological environment’ and ‘human historicity’ into which biopower places its human subject – the discourse of adaptive capacity carries a fundamental

ambivalence about the possibility of transformative change and about the role of human agency in bringing it about. Despite the construction of the agent and politics of adaptation, the prospects for their meaningful realisation remain circumscribed by the foundations of this discourse in evolutionary biology. My analysis reveals the politics inscribed in the discourse of adaptive capacity itself, with the process of adaptation, as the functional interaction of the living system, ultimately privileged over considerations of context and content. In the following chapter I introduce the contrasting representations of vulnerability and adaptive capacity that have emerged as the discourses set out here have been applied to the context of Aboriginal and Torres Strait Islander Australia, before exploring in the subsequent chapters the ways in which the discursive politics of adaptive capacity manifest at this site, and their implications.

## **Chapter 4: Constructions of Indigenous vulnerability and adaptive capacity**

In this chapter I introduce the conflicting representations of Aboriginal and Torres Strait Islander communities as both particularly vulnerable and particularly resilient in the face of climate change impacts, and argue that these reflect the different discourses of adaptation in the previous chapter. These are the constructions of the subject of adaptation, and of the field of adaptation options available to it, that I identified in my analysis of a corpus of policy and research texts related to the issue of climate change adaptation in Indigenous Australian communities. This chapter describes how these representations have emerged as the different discourses of adaptation in international research and practice have become enmeshed with existing discourses at this site, taking on specific meanings and significance as they define the prospects for adaptation for Indigenous Australians.

In the first section I discuss the broader discursive context in which the representations of Indigenous vulnerability and resilience have formed. This includes the ideas about human origins and evolution that defined early European depictions of Australia's first peoples, as well as the global discourse of indigeneity that emerged in the 1960s, offering a platform to challenge these depictions and the colonial structures they were seen to legitimise. What has always fundamentally been at issue in this field of contested representations, or 'race war' in Foucault's sense, is the extent to which Indigenous identity is cast in historical or biological terms. Australian colonial discourses have operated on the premise of naturalised or biologised racial difference, while resistance to them has typically gained ground by directing attention to the events and effects of pre- and post-invasion histories. I argue in this chapter that these competing readings



of Indigenous identity are apparent in the ways that climate change discourses have appeared in Indigenous Australia, shaping the biopolitics of adaptation at this site.

Mirroring the structure of the preceding chapter, the following three sections then describe the forms that the biophysical, contextual and adaptive capacity discourses have taken in the context of Aboriginal and Torres Strait Islander communities. Particularly important is the contrast between a contextual approach that insists on history, on the one hand, and the Indigenous adaptive capacity discourse that positions communities within the social-ecological system and attributes to them an inherent adaptive capacity, on the other. This examination of these competing discourses – and the corresponding representations of the Indigenous subject as particularly vulnerable and as uniquely resilient, respectively – forms the foundation of my arguments in the following chapters about what is at stake as the governmentality of adaptive capacity eclipses a more historical and contextual approach, constructing for Aboriginal and Torres Strait Islander communities both opportunities and constraints.

#### **4.1 A history of adaptation to environmental change**

Ideas about the capacity of Indigenous peoples to adapt to contemporary climate change must be understood as originating in the colonial context in which the first peoples and European settlers first encountered one another. As I describe in this section, various discursive constructions of the Aboriginal and Torres Strait Islander peoples have been produced and reproduced by the European settlers since this first encounter – including that associated with the discourse of *terra nullius*, which represented them as less than human. Australia's first peoples have worked to challenge and revise these representations, mobilising the global discourse of indigeneity to unite within the category of Aboriginal and Torres Strait Islander peoples and assert their rights.<sup>4</sup> The discourse of indigeneity –

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<sup>4</sup> Throughout this dissertation I refer to Australia's first peoples alternately as Aboriginal and Torres Strait Islander peoples, or as Indigenous peoples. I use the terms indigeneity and indigenous peoples without capitalisation to refer to a mode of self-identification by first peoples around the world.

which I interpret here as a politico-historical discourse, in the sense described in Chapter 2 – is associated with a global rights movement since the 1960s and has formed the basis for Australia's Indigenous peoples to assert a history of environmental stewardship and adaptation. The unique adaptive capacity increasingly recognised as a result of these efforts constitutes a powerful discourse in the context of anthropogenic climate change. It is, however, also called into question by the scale of climate change impacts, which has seen Indigenous communities, like other communities around the world, become subjects of adaptation governance.

#### *People outside of time and place*

The projects of European imperialism in Australia and other parts of the colonial world classified as 'primitive' the native peoples they encountered according to the biological lens on human life being developed at the time. They thereby manufactured discourses of human civilisation, and an attendant hierarchy of races, which were in turn employed to justify the dispossession and the subjugation of these native peoples. I describe below how these discourses located Australia's first peoples 'at the junction between history and biology' (Whatmore 2002: 65).

It was in these colonial contexts that theories of human adaptation to environmental change were initially developed in the disciplines of ecology, anthropology and geography, as outlined in the introductory chapter. The native societies that became the objects of study in these contexts were 'taken to represent unmarred, uncomplicated examples of humankind interacting with nature' (Garvey and Bettinger 2014: 19) – a view that has endured in various forms, both derogatory and commendatory, since. They were therefore seen to offer an opportunity to refine understandings of human evolution and adaptation, including to investigate the extent to which humans are subject to natural selection. On the basis of a perspective that positioned hunter-gatherer societies on the bottom rung of the human evolutionary ladder – often by associating with Europe's deep past the intimate dependence on the land and hunting that was observed in these societies – these peoples were expected to soon become extinct (Head 2000). Within this category, Australia's first peoples were

considered ‘probably the *most* primitive race now existing’ and Australia was therefore seen by anthropologists as ‘a fundamental research laboratory of human cultural evolution’ (Attwood 1996: 101).

Related to this representation of native peoples as remnants of an earlier stage of human evolution was another that positioned them outside of human history altogether. This was an expression of the idea that, as argued by Edward Said and others, ‘the Occident had History and Agency; the Orient did not’ (Pinney 2008: 398). The discipline of anthropology excluded Australia’s first peoples from history by ‘constructing them as an unchanging people’, Bain Attwood argues, citing a school primer from the turn of the last century that read ‘Change and progress are the stuff of which history is made: these blacks knew no change and made no progress, as far as we can tell’ (Attwood 1996: 102). A perspective of hunter-gatherer societies as ‘timeless’ was associated with the ‘dehistoricisation’ of the discipline through the middle decades of the last century (Head 2000: 76) – an ahistorical perspective associated with the synchronic analysis of adaptation of human systems in cultural ecology and ecological anthropology discussed in the previous chapter.

These views of the native peoples of Europe’s colonies as stuck in humanity’s prehistory or, indeed, outside of history were seen to justify the colonial project. On the basis of the expectation that the hunter-gatherer and other ‘primitive’ ways of life were rightfully destined to die out, a battery of European techniques of governmentality were deployed to bring the subjects of empire into history. Udda Singh Mehta argues that liberal government makes sense of the unfamiliar by framing it as provisional and incomplete (Mehta 1999: 191). The task of biopolitical governance is then constructed as being ‘to connect that provisional, incomplete, or even repugnant species-life to a more accurate science, a more consistent morality, a more just politics’ (Duffield 2007b: 230), enabling imperial subjects to follow their civilisers in transcending nature.

In Australia, the idea that indigenous peoples exist outside of time also located them outside of *place* (Attwood 1996), which enabled the purposeful non-recognition of the presence of Aboriginal peoples on the continent. This was captured in the legal discourse of *terra nullius* and was seen to legitimise the

appropriation of the Australian landmass by the British Crown. Here the objective of colonisation was primarily the elimination of native life and not the utilisation of native labour as was the case elsewhere (Wolfe 1999), constituting, in other words, the literal – and not only metaphorical – evacuation of the colonised space (Whatmore 2002). The European settlers sought to precipitate the anticipated extinction of Indigenous cultures with the extermination of countless tribes achieved through the devastating frontier wars (Elder 2003; Reynolds 1982). This strategy was replaced with policies of assimilation that represented in effect another way of hurrying the continent's first peoples into extinction (Maddison 2009). Only in the second half of the twentieth century was government forced to recognise Indigeneity and to begin to govern to preserve it on a meaningful scale, as Aboriginal and Torres Strait Islander peoples increasingly asserted a substantive collective identity, telling stories of their pre- and post-invasion histories in terms legible to the colonisers.

#### *A presence in the environment*

A global discourse of indigeneity emerged in the second half of the twentieth century in the context of anti-colonial sentiment in states undergoing formal decolonisation as well as an 'era of post-imperial politics' in many settler states (Johnson 2011: 192). It serves as a vehicle for political resistance by diverse peoples 'who share, at the very least, the notion that they have all been oppressed in similar ways for similar motives by similar state and corporate entities' (Niezen 2003: 4). 'Mobilized at least in part to develop a sense of political solidarity' (Levi and Dean 2003: 5), it represents the construction of a collective identity by the groups who deploy it, an identity which forms the basis of political claims that are typically articulated with reference to prior occupation of a territory and to a sovereignty never ceded (Maybury-Lewis 1997: 7). Functioning primarily to 'denote a structural position for a group of people whose main characteristic is a lack of influence over the workings of the state, and therefore also over their own situation' (Saugestad 2001: 31), the discourse of indigeneity has little beyond this in terms of substantive content. Its very pliability allows it to be deployed in diverse contexts to significant effect, including by 'linking groups that were hitherto marginal and politically unorganized to transnational sources of ideas, information, support, legitimacy and money' (Kingsbury 1998: 416–417).

Through this discourse, various peoples around the world have identified themselves as indigenous and sought recognition and collective political, cultural, and property rights in the international sphere as well as national contexts (Bowen 2000).

Australian Indigenous resistance began to make significant – or least visible – gains in the 1960s with the advent of what is referred to as the era of ‘self-determination’. A 1967 referendum led to Aboriginal people and Torres Strait Islanders being afforded full Australian citizenship status, allowing their inclusion in the national census and enabling the federal government to legislate with respect to them. Since then, Indigenous peoples in Australia, like others elsewhere in the world, have sought to reclaim ownership of or, at a minimum, access to the lands taken from them in processes of colonisation. In Australia land has become a core feature of indigenous politics and policy as Indigenous peoples have pursued, and to some extent achieved, opportunities to return to their ancestral lands through land rights claims and natural resource management (NRM) initiatives as part of a broader vision of community development and self-determination (Altman 2012).

In pursuing rights and access to land, Aboriginal and Torres Strait Islander peoples have asserted an *historical presence* on the continent that had been erased by the discourse of *terra nullius*. To the extent that they had been recognised by colonial administrators and in early scientific expeditions, it was as part of ‘the natural world’ (Anderson 1998: 126). In efforts to establish their presence and roles in the landscapes of pre-settlement Australia, and to secure rights to their lands, Aboriginal and Torres Strait Islanders have constructed themselves and been constructed in terms of a singular Indigenous identity (Muecke 1992). This is a ‘strategic essentialism’ that in part, paradoxically, repurposes the discourse of primitivism – the very denial of history – that originated in the imperial contexts described above (Goodall 2014). Within this discourse, Indigenous peoples have successfully mobilised evidence of the maintenance of *traditional* cultural and environmental practices, emphasising the continuities rather than the discontinuities of their histories (Attwood 1996). The establishment of the *Aboriginal Land Rights Act 1976 (Northern Territory)* and the High Court finding in

the 1992 *Mabo* case have been significant, although by no means unqualified, victories in this struggle.

It must be noted, however, that this essentialist discourse has meant that the demonstration of traditional culture has tended to constitute a condition of the state recognition of Indigenous identity. Land right claims have subsequently hinged on the demonstration of continuity of connection to the ancestral lands of the claimant group, placing an onus on the group to prove an undisrupted connection (Povinelli 1998) and, effectively, that they have been 'relatively untouched by history' (Schaap 2003: 19). In this sense the identity claims of indigenous people are governed by an apparatus of colonial governmentality that effectively limits the political ends to which culture can be put (Stoler 1995). This is what Lana Tatour refers to as the 'culturalisation of indigeneity', which erodes it as 'a potentially radical political concept' (Tatour 2019: 2) that 'insists on indigeneity as a product of colonisation' (9). It presents Indigenous peoples with a choice between 'being excluded from the debate and asserting themselves in essentialist and primordial vocabulary (Sylvain 2002: 1074), with effects that I discuss further in the following chapter.

Another dimension of these assertions of identification with land has consisted of efforts by members of Aboriginal and Torres Strait Islander communities to secure roles in its contemporary management. In doing so they have had to challenge a colonial paradigm of environmental management in which the discourse of *terra nullius* was inscribed in a concern with the conservation of those areas deemed to be of natural value and regarded as uninhabited 'wilderness' untouched by the effects of human resource extraction and degradation. A growing appreciation of the role of Aboriginal and Torres Strait Islander peoples in pre-settlement landscapes is associated with what is now seen by many as sophisticated and sustainable environmental stewardship through strategic burning and other practices (Gammage 2012; Pascoe 2014). This now underpins a discourse of sustainability that is made possible and particularly powerful in the context of contemporary concern about environmental crisis (Rowse 2017), as I discuss in the following chapter. This recognition is found hand in hand with the related acknowledgement of the limitations of non-indigenous land management, including the devastating impacts of many post-settlement practices such as

introduction of feral species (Langton 1996: 27). Thus, in a dramatic reversal of the conviction that conservation saves wilderness from indigenous peoples, this has resulted in 'a different "certainty": that "they" have it right and "we" have it wrong' (Adams 2008: 311). This construction of Indigenous identity creates opportunities – as testified by the expanding caring for country movement – even as it reproduces an essentialism attended by risks and complications.

The politico-historical discourse of indigeneity, by offering a platform for Indigenous political mobilisation, has thus enabled assertions of a pre-invasion presence on the Australian continent and displaced the discourse of *terra nullius*. Its success in challenging the construction of Australia's first peoples as outside of time or history is not so unambiguous, however. I argue in this chapter that, despite further revisions described in the following section, ahistorical constructions of Indigenous identity continue to appear, with political implications, in the discourses of climate change adaptation.

#### *The question of capacity*

The constructions of Australian Indigeneity in the academic disciplines of anthropology, archaeology, history and others have continued to evolve, shadowing the Aboriginal and Torres Strait Islander peoples' struggle for self-determination (Cowlshaw 1992). Since the 1980s, critique of earlier ahistorical constructions has emerged as these disciplines have 're-examin[ed] "the essential" Aborigine' (Head 2000: 77). The view in anthropology of hunter-gatherers as pristine, untouched, and 'isolated from historical developments' came under challenge in the hunter-gatherer 'revisionist debate' centring on the Kalahari (Barnard 2006). In Australia, historian John Mulvaney's influential critique of Australian anthropology offered a radically different reading of Aboriginal history, asserting that 'Aboriginal society [...] was never static' and that 'the Aborigines were not captives of an unchanging and hostile environment' (cited in Attwood 1996: 106). Attwood notes that this portrayal of Aboriginal people as 'agents of change' allowed Mulvaney's examination of how they at one point too had 'colonized the continent, both adapting to and changing the environment' (1996: 106).

These discursive shifts have helped to make it possible for Aboriginal and Torres Strait Islander peoples to now claim a long history of adapting to environmental change through accounts such as the following by the Dhimurru Aboriginal Corporation in its Indigenous Protected Area (IPA) management plan:

Our ancestors were here before the seas began to rise 18,000 years ago, flooding over our vast coastal plains and estuaries, providing habitat for seagrasses and food for the marine turtles and dugongs that followed. We adapted to these great changes and we embraced the environments and ecosystems we see today as part of our heritage, our culture and our livelihood (C71/Dhimurru 2015: 46).

This history of adaptation forms the basis for assertions of the Indigenous adaptive capacity in the face of anthropogenic climate change, and the governmental vision centred on this construction, that I investigate in this dissertation.

As research on climate change has expanded, however, the scale of projected impacts has become clearer, as have the ways in which indigenous peoples are vulnerable to these impacts and face obstacles in adapting to them. Their capacity to adapt has thus been problematised, calling into question the extent to which the capacity demonstrated throughout history is adequate in the context of unprecedented anthropogenic climate change. It is argued that unprecedented climatic and related environmental impacts could make 'traditional responses to risk [...] no longer directly relevant' (C41/AWNRMB 2012: 25). The Torres Strait Regional Authority (TSRA) states, for example, that 'the unique cultures and environments of the Torres Strait that have weathered change over many millennia [...] now face a very uncertain future' (C69/TSRA 2014: i). In a provocative statement, Clive Hamilton has claimed that 'it is not patronizing to say that Indigenous people do not have the solutions to the Anthropocene. The Anthropocene is as much a shock to them as it is to everyone else' (Hamilton 2017: 53). The questions reflected in these excerpts about the extent to which Indigenous peoples are vulnerable to, or well equipped to cope with, the impacts



of anthropogenic climate change have established Indigenous adaptation as a site of research and governmental intervention in the last two decades.

The nature and extent of Indigenous vulnerability and adaptive capacity has remained a matter of research and debate, with divergent perspectives articulated in the discourses that have featured in this governmental space. I examine these discourses, drawing on the corpus of texts analysed in this study, in the remainder of this chapter. I argue that responses to the question of Indigenous capacity differ to the extent that they cast Indigenous peoples in historical or in biological terms. Although adaptation is no longer assumed to be the autonomous process that it appeared in the ahistorical theories of cultural ecology and ecological anthropology, I show how the discourse of adaptive capacity has recently revived an ahistorical construction of Indigenous identity.

#### **4.2 Biophysical vulnerability and adaptation**

As I described in the previous chapter, when climate change adaptation emerged as a site of governance it was dominated by a biophysical risk management approach. Constructing climate change impacts as threats emerging from an external, 'natural' environment to affect a distinct, social realm, like the hazards school of geography from which it is directly derived, this approach excludes consideration of historical and other non-physical dimensions of Indigenous vulnerability. This approach underpins one of the ways in which indigenous people around the world have been identified as particularly vulnerable to the impacts of climate change (IPCC 2001). In this section I outline the factors that appear in biophysical accounts of Australian Indigenous vulnerability in the texts analysed.

The biophysical reading of vulnerability attributes it to *exposure* to climatic and other related risks, and in the case of Aboriginal and Torres Strait Islander peoples, the location of some communities on or near their ancestral homelands in remote areas is prominently cited as a risk factor. These communities are considered to be vulnerable because these areas are identified as being exposed to future projected sea-level rise, flooding or damage by tropical cyclones (C14/EMA 2007). It is pointed out that these communities tend to be in locations in which weather patterns are already fairly extreme; it is not atypical, for

example, for those communities classed as 'remote' in northern Australia to be entirely cut off except by air for multiple months at a time during the wet season. As stated by the TSRA, the location of their communities places Indigenous peoples in regions such as the Torres Strait on 'the front line' compared to other Australians (C69/TSRA 2014: 1).

Residence in remote and highly exposed areas indirectly accounts for what are listed in a report commissioned by the COAG on natural disaster response as other sources of Indigenous vulnerability. These factors include the 'low population level and density' (C04/COAG n.d.: 1) of some communities, which in turn is related to further impediments such as 'high repair and maintenance cost for infrastructure due to remoteness' (C10/COAG 2002: 70). It is observed that 'remote communities often have to wait weeks, sometimes months for the return of repaired equipment and machinery. This means that communities are even more vulnerable with no access to life saving equipment and machinery' (C04/COAG n.d.: 5). While remoteness here implicitly refers to position relative to other settlement, it is represented as a physical property of communities themselves. It is the reason given for the inadequacy of infrastructure and services in remote regions, where it is argued that 'the very smallness of these outback communities increases their vulnerability because their small population concentration will only support a limited range and level of services and facilities' (C04/COAG n.d.: 2).

More occasionally other factors associated with location, such as 'issues involving boundary responsibilities for some remote communities' (C10/COAG 2002: 70), are similarly cited as obstacles to governance. Although these kinds of factors can be interpreted as pointing to contingent matters of administration, they are generally presented as immutable. This is captured in the following statement by a government official with reference to the Wujal Wujal community of far north Queensland: *'I don't think it would matter what the council did or any other emergency service did[;] it's just going to be really difficult to resupply and deal with places that are further away'* (C53/Bird et al. 2013: 132; emphasis in original).

Accordingly, on the basis of an understanding of vulnerability in terms of biophysical exposure, whereby adaptation is about seeking to be 'better equipped to deal with external influences' (C11/DEH-AGO 2005: 21), adaptation for Indigenous communities is presented as a matter of addressing the challenges posed by sheer exposure to climate change impacts. Adaptation policy of this kind involves measures to improve and ensure the availability and adequacy of emergency services, power and food supplies, and communication and transportation channels, including through the installation of infrastructure designed to minimise physical damages during extreme weather events, such as cyclone shelters (C48/Langton et al. 2012; C28/Green et al. 2009; C58/Leonard et al. 2013).

This representation of Indigenous vulnerability and possibilities for adaptation excludes consideration of historical, social and political context. Traces of environmental determinism can be seen in the assumption that biophysical impacts necessarily represent hazards, excluding the possibility that factors in these contexts might mitigate such threats. Moreover, the characterisation of Indigenous Australians in general as vulnerable on this basis is possible only if it is assumed that most Indigenous people live in these remote, rather than urban, areas – which is simply not the case. While these characterisations of vulnerability and proposed adaptation measures are persistent, they account for a relatively small proportion of the discourses of Indigenous adaptation analysed in this study. More powerful are the discourses of contextual vulnerability and adaptive capacity, which I explore in the following sections.

### **4.3 Contextual vulnerability and adaptation**

An alternative reading of Indigenous vulnerability is also evident in the corpus of texts I analysed, one which can be seen to be influenced by the contextual discourse described in the previous chapter, and its attention to difference, history and specificity. This reading locates the reasons for vulnerability or lack of adaptive capacity in the broader, non-climatic context in which climate change impacts manifest. From this perspective it is argued that despite a long history of adaptation to environmental changes, communities may *not* have at their disposal what is required to successfully adapt to anthropogenic climate change, and that

this generally has little to do with whether or not climate change impacts are unprecedented, but rather with political factors entirely unrelated to the weather. In this way the construction of Indigeneity and Indigenous experience in this context is rehistoricised. In this section I set out the elements of this argument before examining in more detail what this is considered to mean for adaptation in vulnerable Indigenous communities.

#### *The causes of vulnerability*

Taking up the task of investigating these non-climatic sources of vulnerability in line with the critical insights outlined previously, vulnerability assessments in Australian Indigenous communities no longer look only at models of future climates and conditions of physical exposure. Here an interest in Indigenous *difference*, in the ‘specific issues and concerns relating to Indigenous Australians’ that justified the establishment of an Indigenous stream of NCCARF, takes on greater depth, looking beyond the location of some Indigenous communities in hazardous, remote areas, to the other factors relevant to their experiences of climate change impacts. The importance of attention to other dimensions of Indigenous difference is articulated by the NCCARF National Adaptation Research Plan for the stream dedicated to Indigenous communities, which makes the case that ‘research is critically needed into the interactions between existing stressors (social, political, economic, cultural and environmental) and the impacts of climate change on Indigenous individuals, households, businesses, institutions and communities’ (C48/Langton et al. 2012: 27). One of the NCCARF reports within this research stream notes that ‘acknowledging the multi-dimensionality of climate change vulnerability allows us to account for the complex determinants of vulnerability that are faced by Aboriginal people’ (C60/Memmott et al. 2013: 30). Another by Bird et al. explains that it sought to ‘place the community in its entire context, not just a ‘climate’ or ‘weather’ context (C53/2013: 211).

A focus on this context draws attention to how the vulnerability of Indigenous peoples arises from ‘the social and economic disadvantages they already face’ (C18/AHREOC 2008: 234). This suggests that the vulnerability associated with climate change is not new or different in kind to existing vulnerabilities: ‘these communities are vulnerable to the effects of climate change in the same way that

they are vulnerable with respect to *any* stressor, climatic or otherwise' (C25/EPNRM 2009a: 41; emphasis in original). The adaptive capacity of Australian Indigenous peoples is considered to be 'low as a result of the same systemic issues confronting Indigenous people that have led to disadvantage' (C59/Low Choy et al. 2013: 1). For example, 'if a community is already stressed with poverty, it will be less able to cope' (C34/NAILSMA 2010: 5). This manifests as entrenched poverty and inequality across a range of socio-economic indicators including health, education, employment (C57/Horne et al. 2013; C11/DEH-AGO 2005). It was observed by an informant for a NCCARF report that in the lead-up to cyclones, in the past some non-Indigenous people living in remote parts of the Top End have chosen to evacuate their families – but '*Aboriginal people didn't have that luxury; they couldn't quickly find \$600 per person to put their kids on a plane*' (C53/Bird et al. 2013: 136; emphasis in original). It is sometimes conceded in government texts that vulnerability exists at least in part because in many cases 'community infrastructure and services [...] are well below national standards' (C10/COAG 2002: 70).

Many of the texts in the corpus acknowledge that the dynamics of vulnerability go deeper than these more tangible symptoms. It is argued that the root of Indigenous vulnerability is the experience of colonisation and the dispossession, stolen generations, and deep ongoing marginalisation that is its legacy, for 'people whose rights are poorly protected are also generally less equipped to adapt to climate change impacts' (C18/AHREOC 2008: 97). In this reading, vulnerability is attributed in part to the loss of possession of and access to ancestral lands, waters and natural resources, and the erosion of 'ancestral, spiritual, totemic and language connections' to them (C28/Green et al. 2009: 17). This analysis directs attention to the ways in which processes of colonisation have undermined the means that people have historically employed to respond to environment change.

This perspective emphasises that what have been framed as 'traditional' Indigenous knowledges and practices have long been, and continue to be, challenged by and forced to confront the unfolding changes that attend Western modernity in the wake of European settlement.<sup>5</sup> In addition to the policies of

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<sup>5</sup> Originating in the imperial discourses discussed in the first section, such a distinction between the traditional and the modern is problematic. As I discuss further in Chapter 6,

removal of people from their country and of children from their families that are the more overt forms of displacement of the colonial period, the more diffuse imposition of Western forms of housing, labour, education and language, along with many other aspects of 'modern' life, represents an ongoing challenge, and one that can in many ways constitute no less a threat of displacement. It is argued that, just as colonisation is not an event that can be relegated to the past tense (Wolfe 1999), it cannot be assumed that these threats and challenges ease with time, although they may take on different forms. People who identify as Indigenous therefore continue to negotiate the challenges and complexities of life in a world that is inevitably a double or hybrid one, drawing on 'traditional' and 'modern' elements and seeking to preserve, change and combine them in diverse ways (Merlan 1998). It is in this context that they come to the task of adaptation (Parsons 2014).

To the extent that it invokes the construction of a long history of Indigenous adaptation introduced in the first section, this discourse of vulnerability underlines the *depletion* of an historical adaptive capacity by the ongoing effects of colonisation. This reading suggests 'change has happened and [...] the capacity for [the Arabana people of central Australia] to subsist as in earlier times is now perceived to be considerably reduced' (C63/Nurse-Bray et al. 2013: 65). The 'fault line of invasion undermined the grounds of the adaptability' that Australia's first peoples had demonstrated prior to settlement (C63/Nurse-Bray et al. 2013: 30). The strategies that were typically employed in periods of natural resource scarcity, for example, including temporary migration (C41/AWNRMB 2012), are often no longer feasible due to limitations on population mobility and access to land. In their stead, the imposition of new modes of living – for example, 'the development of sedentarised Aboriginal communities with housing stock and related infrastructure' – has changed how these communities experience extreme weather events, for example (C58/Leonard et al. 2013: 85). The adoption of this 'quasi-urban style of existence has eroded their traditional skills' (C04/COAG n.d.: 4). Informants of reports from remote Australia have expressed that, 'years ago

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any attention to the complex negotiations of indigenous life in settler contexts also quickly reveals this distinction to be too simplistic to account for the cultural interplay of these contexts (Thomas 1991; Pratt 1991). The terms are nevertheless used here to distinguish between the elements that are negotiated in this interplay: what Indigenous Australians refer to as their heritage, and what originates in the European colonial project.

we used to know everything because we would go out in the country all the time and feel the changes. Now we are just stuck in [the town of] Amata' (Bardsley and Wiseman 2012: 720) and *'in years gone by we used to know the seasons. These days I don't know how to predict [...] Got to look at TV now for the weather'* (C60/Memmott et al. 2013: 102 and 103; emphasis in original). The loss of adaptability is captured poignantly in the statement by an Aboriginal man from southern Western Australia reported by Prober et al. that 'if you took away the pipeline and the fridges and all that from here we wouldn't last very long now' (C65/Prober et al. 2013: 40).

From this point of view, the spectre of climate change lends additional importance and urgency to existing efforts by some Indigenous peoples to prevent further loss of elements of their traditional cultures (Merlan 1998). These efforts are formalised in a range of initiatives, including oral history projects, cultural camps and festivals, cultural heritage programmes, language recovery and re-education projects, and ranger programmes. In the context of climate change, passing culture on to young people is represented as being the most important objective of these efforts, but recording knowledge – for '[w]ithout a good record of the cultural landscape there is no buffer against intergenerational gaps in knowledge transfer' (C06/Karrkad-Kanjdi Trust n.d.: n.p.) – is also considered vital. The role of traditional cultural practices and knowledges in achieving adaptation is very different in this discourse – in which the degradation of culture in processes of colonisation is referred to as an injustice that has left Indigenous peoples more vulnerable – to that which it plays in the discourse of adaptive capacity, as I argue below.

Another dimension of Aboriginal and Torres Strait Islander vulnerability in this discourse consists of the impacts associated with land. This includes climate change impacts exacerbated by the effects of dispossession and the subsequent, typically radical, changes in land management practices on the Australian continent, which have given rise to new and increased biophysical risks and challenges in the form of altered fire regimes, soil erosion and the introduction of feral animals, among many other trends (C06/Karrkad-Kanjdi Trust n.d.; C41/AWNRMB 2012). Also present in the corpus and academic literature is a fear that climate change could in fact cause Indigenous communities to lose access to

their country altogether, whether due to its direct impacts or as a result of policy responses to climate change (C19/Altman and Jordan 2008). The 2008 Native Title Report by the Australian Human Rights Commission described it as an 'obvious' possibility that 'our lands and territories may become uninhabitable due to the impacts of climate change', which would further undermine those traditional practices and knowledges that constitute historical adaptive capacity (C18/AHREOC 2008: 110). Loss of access to land would have 'the potential to disturb Indigenous people's connection to country and their land and water management responsibilities' (110), with potential indirect economic and health repercussions. This is not only the case for remote communities but also those in more populated parts of Australia where, it is argued, other factors such as urban expansion can increase vulnerability to climate change by 'further disconnect[ing] Aboriginal communities from their country and seriously limit[ing] their stewardship opportunity' (C59/Low choy et al. 2013: 1).

This discourse draws on the ideas of critical scholars and activists to situate Indigenous vulnerability in its historical context. These voices have underlined that for indigenous peoples in countries like Australia, as for many of the populations around the world who experienced colonisation as the means by which Europe obtained the resources to industrialise and thereby dramatically accelerate the emission of greenhouse gases into the atmosphere (Mitchell 2011), the impacts of the double imposition of colonisation and climate change compound one another and amplify their vulnerability (Crate and Nuttall 2009). Climate change can, from this point of view, be seen as 'environmental colonialism at its fullest development', with once again 'indigenous peoples and other place-based peoples find[ing] themselves at the mercy of – and having to adapt to – changes far beyond their control (Crate and Nuttall 2009: 11).

It has been argued that climate change threatens to establish another expression of what Johan Galtung termed 'structural violence', which was left all over the world in the wake of colonisation (O'Lear 2016). Rob Nixon has built on Galtung's concept of structural violence with that of 'slow violence' to refer to 'a violence that is neither spectacular nor instantaneous, but rather incremental and accretive, its calamitous repercussions playing out across a range of temporal scales' (2011: 2). Aboriginal scholar Tony Birch in turn argues that Nixon's notion



of *displacement* is a useful one to understand the effect of climate change in Indigenous Australia (2016). With this concept referring not only to the movement of people but 'to the loss of the land and resources beneath them, a loss that leaves communities stranded in place stripped of the very characteristics that made it inhabitable' (Nixon 2011: 9), Birch frames climate change as another form of 'displacement' that is both an extension and amplification of the violent changes brought about by the colonisation of the Australian continent.

From this point of view, then, not only is Indigenous vulnerability held to be a function of the injustices of colonisation, as I have outlined here, but the measures to address climate change, if not undertaken with caution, have the potential to extend these injustices. As is argued in one NCCARF report, 'climate change hazards [...] can distract from the "disaster of colonisation"' (C66/Tran et al. 2013: 42-43). As I discuss below, these arguments have informed reflection about the relations of power at play in how climate change is approached as a matter of research and policy in Aboriginal and Torres Strait Islander communities, shaping a new governmentality of adaptation that is sensitive to the political effects of adaptation policy itself.

### *The politics of knowledge*

Critical reflection on the politics of adaption itself has considered the ways in which climate change is known in the first instance and the ways in which responses are developed on the basis of different types of knowledge. In the case of Indigenous communities, it includes a recognition that climate change, as an object of research and policy that occupies the time and resources of communities, is but the latest in a long and cumulative series of colonial interventions (Parsons 2014). This belongs to a broader push, aligning with the critical interventions of STS, postcolonial and development scholars described in the previous chapter, to redress the relative powerlessness of indigenous peoples around the world in the production and use of Western knowledge. This includes initiatives to subject the research process to critical scrutiny and open it up to Indigenous participation.

Aboriginal and Torres Strait Islander peoples have, it is argued, suffered the imposition, since European colonisation, of 'ways of knowing and representing the

world associated with truth and authority, such as science and law’ and a corresponding marginalisation of alternative Indigenous Australian ways of knowing and being in the world (Davis 2006: 147) – or what amounts to ‘epistemological violence’ (Goldman and Turner 2010: 17). Veland et al. describe as ‘procedural vulnerability’ the vulnerability that can arise from ‘the processes and assumptions that inform research questions, methods and outcomes’ (2013: 314). From this perspective it is maintained that violence might occur even in the way that vulnerability is depicted and policy priorities formed on the basis of different types of vulnerability assessment. It is therefore important to ensure that research projects are ‘epistemologically ground proofed to ensure that they “see with both eyes”’, incorporating and recognising both Indigenous and non-Indigenous perspectives (2013: 316).

All of the vulnerability assessments of Indigenous communities analysed in this study stressed the importance of attending to the politics of the research process itself, in light of the ‘profound amount of distrust and bitterness’ colouring engagement by government, academia and others with Indigenous communities, which ‘stem[s] from a long history of disrespect, betrayal, exclusion, marginalisation, exploitation, and top-down control’ (C55/Griggs et al. 2013a: 36). The NCCARF report by Bird et al. takes up the challenge to ‘researchers [to] think critically about methodological processes’ (C53/2013: 98) with the objective, citing Porsanger, to ‘contribute to the body of knowledge of Indigenous peoples about themselves and for themselves, and for their own needs as peoples, *rather than as objects of investigation*’ (2004: 105; emphasis added). In positioning Indigenous communities as agents in the research process, it is further argued that there is a need to create a way for indigenous peoples to respond once the problem has been introduced. As Veland et al. argue, there is procedural injustice in ‘the introduction of the concept of climate change to the community without facilitating a clear means to respond’, hence ‘there is an urgent need to engage residents in climate change adaptation in translating concern into meaningful responses’ (2013: 321).

The texts in the corpus are also generally at pains to stress the value of the indigenous knowledges and worldviews displaced or discounted by Western science in previous waves of research in and on Aboriginal and Torres Strait

Islander communities. Acknowledgement of the value of local perspectives and experience has fed into the interest in traditional indigenous knowledge that is widespread in international climate change discourses (Smith and Sharp 2012). The substantive insights from within Indigenous communities that are of interest to climate change researchers include observations of contemporary climatic changes in local environments, community perspectives on local conditions and needs, and information about the local strategies of responding to historical environmental changes. A government report on NRM in Australia notes, for instance, that the academic scholarship is 'now showing that centralised science and policy are poor at reflecting local differences, and that great benefits [...] can be obtained by linking local knowledge with science and policy in ways that capitalise on the best attributes of each' (C30/NRMMC 2009: 166).

Such proposals to 'link' local knowledge with 'centralised science and policy' belong to a larger discourse of integration, including that of scientific and indigenous and other non-scientific knowledges and practices, that I explore in Chapter 8. In the area of fire management, for example, this would involve 'combining the knowledge of thousands of years of Aboriginal practice with remote sensing technology, contemporary fire management techniques and the technical expertise of Bushfires NT' (C03/CLC n.d.: n.p.). Articulations of the imperative, in the context of climate change, to integrate scientific and indigenous knowledges are ubiquitous in the texts analysed. The discourse of the integration of scientific and indigenous knowledges is – like that of dialogue about community experiences of climate change – not only about accessing better knowledge, however, but about taking care not to privilege one knowledge system over another. This approach to integration, often described as 'two-way' or 'both-way', is one that 'recognis[es] the value of both western science and Indigenous ecological knowledge' (C40/Hill et al. 2011: 19). It is argued that 'The incorporation of traditional knowledge in these assessments at a level dictated by Indigenous people is an important part of' vulnerability assessment and adaptation planning (C59/Low Choy et al. 2013: 48).

The recognition of the value of indigenous knowledges has become all the more vital in light of climate change, it is argued. In the international context indigenous peoples, among other 'translocal actor coalitions', are becoming 'increasingly

prominent players' in international development and environmental forums for precisely the challenge to the 'simplifying and universalizing forces of global science, technology and capital' that they are seen to offer (Martello and Jasanoff 2004: 4). On the grounds that many problems addressed in these forums in fact originate in or are mediated by these very forces of science, technology and capital, it is claimed that at least part of their solution is therefore to be found at the 'local' level, including in the 'specificity, even superiority, of local epistemologies' (12). In Australia, the nature of '21st century postcolonial natural resource management problems', including 'the orphaning of country that needs human presence for management, and broad scale and pervasive environmental threats' (Altman 2012: 221) is seen to necessitate Indigenous involvement in order to be able to 'achiev[e] future environmental health' (C15/L&WA 2007: 2). Indigenous organisations make this case vigorously in their efforts to secure roles in both the mitigation and adaptation responses to climate change, maintaining that 'our lands and waters must be managed according to our Laws to make them healthy once again' (C12/Ngarrindjeri 2006: 10). Indigenous knowledges and perspectives thus now widely appear as an essential part of climate change research, and form the basis of efforts to pursue adaptation in ways that align with the existing priorities of communities, as I describe below.

#### *A contextual approach to adaptation*

Attention to the violence of the historical processes that generate vulnerability in Indigenous communities can only conclude that the remedy lies in redressing the injustices of the past to improve the conditions of life in the present. Australian governments have acknowledged a responsibility, on the basis of 'equity considerations' (C54/DIICCS RTE 2013: 23), for 'managing the distributional consequences of climate change for disadvantaged and vulnerable groups' (C50/Productivity Commission 2012: 9). It has long been argued that the solution lies in mainstreaming adaptation into existing policy to further community development objectives. As was described in the previous chapter, this means that adaptation policy need not attend to the specificities of projected future climate change impacts, but ought to advance general community development goals. For Indigenous communities, these objectives centre on governance reform, economic development, cultural preservation, and – the thread that ties

together many of the collective aspirations voiced by Indigenous peoples – land ownership and management.

Accordingly, a report by the Aboriginal and Torres Strait Islander Social Justice Commissioner makes the case that ‘supporting community development opportunities will be crucial in increasing the capacity for Indigenous communities to respond to the impacts of climate change’ (C18/AHREOC 2008: 156). There is a strong sense that adaptation in Indigenous communities cannot be successful unless it also addresses socio-economic disadvantage in particular – unless, as put by Professor Marcia Langton, ‘we are getting people out of poverty’ (C34/NAILSMA 2010: 4). This is highlighted in concerns raised by the TSRA when Queensland government funding earmarked for the ‘close the gap’ campaign was instead used to combat tidal inundation. TSRA Chairperson Toshie Kris was quoted in a press release as saying that, ‘if we stop [the infrastructural work for which the money was originally allocated] the life expectancy, health standards and future of the Torres Strait people will decrease to even lower levels as compared to other Australian communities’ (TSRA 2010: n.p.). This reflects the politics of the ‘additionality’ issue in the international climate negotiations, which centres on the argument that funding for development programmes remain the essential foundation to which adaptation funding – of a magnitude that reflects the extent to which climate change amplifies existing development challenges – must be *additional* (Huq and Burton 2003).

In this discourse it is argued that a *just* approach to adaptation would involve allowing communities to determine their own development goals. This idea draws on the centrality of the discourse of community participation in the development mainstreaming approach described in the previous chapter. It acquires here a further impetus in the context of the broader Indigenous struggle for rights, piggybacking on a longer history of decentralisation in Indigenous policy and the principle of self-determination that has been official (if only sporadically honoured) federal government policy since the 1970s (Quane 2005). It is therefore by no means novel that a document by COAG should assert, for example, that ‘there should also be a focus on sustainable community development, to promote full and effective participation of Indigenous people in decisions affecting their communities’ (C04/COAG n.d.: 6). In all of the NCCARF

reports it is argued that ‘the participation and influence of local people in planning and decision-making processes that affect their future’ figure prominently among ‘the enhanced governance responses which are vital for improved adaptation outcomes’ (C60/Memmott et al. 2013: 6). The report by Memmott et al. also stresses that such community self-determination must also be adequately supported by governments, and that there is a need for governance reform to ‘enhance the amount and nature of the resources available for local communities to manage their individual, group and collective purposes’ (C60/2013: 6). This refers to a broader politics in Australian Indigenous policy around the resources that are required to allow communities to take control of their own affairs. While from the historical perspective outlined here, this must remain a political question to continue to be negotiated at every point, this tension is approached differently – and a resolution even offered – by the discourse of adaptive capacity, as I explore in Chapter 7.

Participation is seen to serve the instrumental functions apparent in the COAG excerpts cited above of ensuring that adaptation outcomes are more effective, by minimising the risk of maladaptation, as well as more efficient, by minimising the risk that resources will be wasted or misdirected. The idea that local perspectives make successful outcomes more likely is captured in a statement by a government official involved in emergency management in the Northern Territory cited by Bird et al.: *‘that’s why arrangements that we’re developing for the remote Indigenous communities, that’s why we’re leaving it so reliant on the community to sort of make sure the community version is correct, because they’re going to know a heck of a lot more than what we will’* (C53/2013: 137; emphasis in original). It is because of this familiarity with local context that communities are best placed to contribute to adaptation, again making successful outcomes more likely. Another NCCARF report observes that ‘Aboriginal community members themselves are best placed to identify the vulnerable sectors of the community, and can draw on its strengths to help in disaster preparedness, response and recovery’ (C58/Leonard et al. 2013: 113).

In addition to these more instrumental functions, however, the language of participation also carries the promise of a more profound redistribution of power which appears to be more consistent with claims to self-determination on the

basis of indigenous rights. On this reading, community autonomy is not only a means to more effective adaptation, but an important goal in itself. This idea is expressed through an emphasis on empowerment and voice in claims that, for example, ‘programs aimed at adaptation for First Nations communities must focus on empowering communities to identify and implement their own responses to climate change’ (C55/Griggs et al. 2013a: 5). These programmes should, it is argued, ‘promote Indigenous voices and ensure that Aboriginal people are recognised as key stakeholders who are involved through consultation, rather than passive recipients of government policies’ (C53/Bird et al. 2013: 6). Based in part on the acknowledgement of the violence that can be done by particular ways of knowing and representing Indigenous subjects, as described above, this concern with empowerment has in fact seen moves away from what is increasingly critiqued as the implicit labelling of indigenous peoples as passive victims in the characterisation of them as vulnerable. Efforts to secure the active participation of adaptive subjects in the process of adaptation are now looking to the importance of building a sense of agency in these subjects – which is a core element of the discourse of adaptive capacity that I discuss in the following section.

The ideas outlined in this section – about the need to understand the historical causes of Indigenous vulnerability, to be cognisant of the harm that can arise from the very ways that Indigenous vulnerability is represented and adaptation options devised, and about the centrality of questions of self-determination and justice – are all derived from the critical voices in international adaptation research and practice described in Chapter 3. These connect together in a compelling discourse that offers a radically different picture of Indigenous vulnerability and governmental vision for adaptation to those of the traditional risk assessment and management approach, by instead historicising both. As I describe in the following section, many of these ideas have also been somewhat reconfigured to different ends and effects in an alternative discourse: that of adaptive capacity.

#### **4.4 The adaptive capacity of Indigenous peoples**

Alongside the contextual reading of Indigenous vulnerability and adaptation set out in the previous section can be discerned another discourse, one which to

some extent shifts the focus away from vulnerability and towards adaptive capacity – emphasising in particular the capacity demonstrated in the Indigenous history introduced in the first section. It is shaped by the various lines of argument running through the contextual discourse which have drawn attention to the ways in which adaptation is, in short, political, but reinterprets many of these insights from a systems theoretical vantage point. I argue that this discourse holds very different implications for Indigenous lives in a changing climate – implications that I explore in the following chapters.

#### *Harnessing existing capacity*

The focus on the capacity to adapt in this discourse therefore redirects attention away from a vulnerability defined by the past towards the question of what is involved in adapting to the challenges of the future and the strengths that communities can bring to this task. In the words of Donna Green and colleagues in a report on climate change risks in northern Australia, ‘the core interest is in how communities may respond to climate change, rather than mapping their current vulnerability’ (C28/2009: 13). Where a contextual reading sheds light on the injustices that reverberate into the present in the wake of Australia’s genocidal colonial history, the adaptive capacity discourse takes a more optimistic view and instead emphasises the adaptive capacity evident in this history. In particular, an agency to navigate environmental and other types of change is at the core of this discourse and is, I argue, the object of a mode of adaptation governance that constructs the field of possibilities available to the adaptive Indigenous subject in terms of this agency.

The ways in which the discourse of adaptive capacity distinguishes itself from that of contextual vulnerability is evident in the following excerpt explaining the research rationale of a NCCARF report:

Although the existing body of climate change research on Aboriginal and Torres Strait Islander people focuses on their vulnerability to climate change and *the degree to which socioeconomic disadvantage serves to decrease their ability to respond to climate change* (Green, Jackson & Morrison 2009; Petheram et al. 2010), limited research has focused on how



Australian Aboriginal people can adapt to climate variation and change, and develop *ways to harness their knowledge, skills and agency to enhance their adaptive capacity*. Little knowledge exists on how Australia's Aboriginal communities have responded to climate variability and change both historically and currently, nor on the lessons that can be learned from those responses. This project seeks to address this gap in understanding, at least in part (C58/Leonard et al. 2013: 4; emphasis added).

Here a focus on the 'socioeconomic disadvantage' that contributes to the vulnerability of Indigenous communities is replaced by a focus on 'ways to harness their knowledge, skills and agency to enhance their adaptive capacity'. The former focus is framed as regressive, dwelling on the past and the problems that it has left behind, while the latter is framed as progressive, looking to the solutions that might be employed to deal with future climate change.

The forward-looking orientation of this discourse places agency at centre stage, emphasising the ways in which adaptive subjects can actively meet the changes in the climate with changes in their ways of life. It is argued that 'in contrast to research linking Indigenous communities with vulnerability, the research into the capacities of RNTBCs [Registers Native Title Bodies Corporate] places them in the position of potential strength as *agents of change*' (C66/Tran et al. 2013: 107; emphasis added). Pointing to the role of choice on the part of the adaptive agent in navigating an adaptive path into the future, it is argued that 'decision making around land and sea management and future adaptation will need to involve indigenous people in a meaningful manner [...] – *so that they can be active agents in determining their own futures* (C64/Petheram et al. 2013: 45; emphasis added).

The discourse of Indigenous adaptive capacity reflects the critical attention to the politics of how people are represented in climate change research that was discussed in the previous section. This involves a recognition that 'there has been a history of treating Aboriginal communities as victims in responding to the impacts of natural hazards' which 'has been a disempowering experience [...] and an obstacle to their active involvement in recovery processes' (C58/Leonard et al. 2013: 85). Because it has also been damaging to communities to be described as

dysfunctional, the affirmation that, for example, although ‘social problems in Indigenous communities undermine social cohesion and community resilience [...] at the same time *there is clearly a great deal of social capital*’ (C53/Bird et al. 2013: 209; emphasis added) is an ‘empowering’ one. This sensitivity to the politics of representation reflects a broader move at the international level away from the language of ‘victimhood’ to a recognition of the agency of marginalised communities in climate change adaptation, community development, and other spheres. This shift in emphasis also mirrors calls in recent years to move away from the ‘disempowering’ deficit language of initiatives to ‘close the gap’ in Indigenous Australia (Fforde et al. 2013).

As I described in the previous chapter, the discourse of adaptive capacity identifies adaptive potential in the existing capacity of subjects of adaptation, looking to their unique strengths. The ‘knowledge, skills and agency’ (Leonard et al. 2013) that are of interest in the discourse of adaptive capacity are those employed by Indigenous communities throughout this history of adapting to and surviving environmental and social change. It is frequently noted that for Indigenous Australians, climate change ‘is not a new challenge; [as] humans have always adapted to climatic variability and also made management decisions and strategies to deal with variability’ (C64/Petheram et al. 2013: 11). ‘Aboriginal peoples have lived through bigger changes than what face us now’ (C26/EPNRM 2009b: 2), as evident in a ‘deep history [...] of change and adaptation’ (C34/NAILSMA 2010: 8). Participants in a climate change adaptation workshop run by NAILSMA noted that ‘we have been doing [adaptation] for generations with changing temperatures and rainfall’ (C34/NAILSMA 2010: 5). Indigenous adaptive capacity is thus constructed in this discourse in terms of a long history of survival of environmental and social change, casting Indigenous difference in positive terms.

#### *The dimensions of Aboriginal and Torres Strait Islander capacity*

The attention to Indigenous difference is in keeping with the interest described in the previous section in the historical specificities that define vulnerability. However, rather than focusing on the particular material circumstances of Indigenous lives and the ways that these have been shaped by Australia’s history,

this discourse looks to difference in the realm of subjectivity. This reflects the emerging 'values-based approach' (O'Brien and Wolf 2010) – building on the earlier 'cultural turn' that situated climate change and scientific knowledge in their cultural contexts – that I described in the previous chapter as being part of the discourse of adaptive capacity. In a paper on adaptation in Arnhem Land, Petheram et al. describe 'perceptions, attitudes, values, culture and norms' as being among the characteristics that determine levels of adaptive capacity as well as those of vulnerability (2010: 688).

At the heart of the discourse of Indigenous adaptive capacity is country. The Aboriginal English term 'country' conveys 'the intimate dynamics between people, other species and environmental processes, the rights and responsibilities that inhere in such intimacies, and holistic perspective on relations between these elements' (Howitt 2001: 54). It captures a lack of distinction, in comparison with non-indigenous worldviews, between nature and culture, means and ends, and human needs and environmental needs (Povinelli 1993). The connection to natural environments articulated by Aboriginal and Torres Strait Islander people along with other indigenous peoples around the world is represented as an instance of what is referred to in the discourse of adaptive capacity as 'place attachment' (Willox et al. 2012; Adger et al. 2012; Adger et al. 2011a). This concept is employed to suggest that people with a strong sense of place attachment are more motivated (Mishra et al. 2010; Wolf et al. 2009) and better equipped (Semken and Brandt 2010: 287) to engage in adaptation in place. An NCCARF report about communities in the Upper Georgina River Basin region in Queensland observe that community members perceive their own adaptive capacity to lie in their 'place attachment' and 'traditional cultural responsibilities linked to their particular kin relationships to land and people' (C60/Memmott et al. 2013: 129). Authors Memmott and colleagues argue that 'these values, ideas and motivations can be converted to adaptive advantage through a suite of appropriate management strategies' (C60/2013: 129).

As discussed in the previous chapter, the 'values-based' approach and the discourse of adaptive capacity more broadly locates adaptive potential in shared values and meaning and the internal dynamics of the communities that share them (Adger et al. 2009b; O'Brien 2009; Adger et al. 2011b). A key part of

discourses of indigenous adaptation is the construction of the *community* as the locus of identity and culture. For indigenous peoples around the world, 'community and culture' are commonly seen to provide 'protection and persistence, and thus an ability to adapt', as Heidi Sinevaara-Niskanen observes of representations of Arctic resilience (Sinevaara-Niskanen 2014: 196). In the corpus of Australian texts, with 'resilience [...] grounded in cultural values, beliefs and practices' (C60/Memmott et al. 2013: 5), communities are seen to have the capacity to 'persist and grow, bound together by culture, history, family and relationships with country' (C48/Langton et al. 2012). This draws on a discourse of community in Indigenous Australia that has underpinned models of Indigenous governance since the 1970s. While associated with multiple layered meanings, the ubiquitous term generally refers to physical settlement sites with predominantly Aboriginal populations as well as, relatedly, the constituencies of new representative and service-delivery organisations established in this period. Although far from unproblematic, the discourse of community is a powerful mode of affiliation, often functioning as a 'key weapon in the struggle for resources and power' (Morgen 2006: 28). It mediates the association of indigeneity with locality – reflected in the concept of place attachment described above – in what Emilie Cameron has argued is a 'profoundly relational reading of Indigeneity' that appears in international discourses of climate change adaptation (Cameron 2012: 105). It appears widely in the corpus of Australian texts, where I argue it often plays an important part of the discourse of Indigenous adaptive capacity as the object of a governmentality that constructs it in the terms of the social-ecological system.

The 'cross-scale' systems perspective of the discourse of adaptive capacity appears in the imperative, as argued by Green and colleagues in a report about climate change risks in northern Australia, to consider the ways in which the prospects for adaptation at the level of the community are shaped by forces that extend beyond this level, however (C28/2009). Community adaptive capacity is affected by factors at the level of households and individuals – such as education, leadership and financial capital – as well by 'policy and programs at larger scales' – which includes issues of infrastructure, awareness-raising programmes and so on. This attention to the wider system is part of what distinguishes this discourse

from the contextual approach. Given that the 'core interest is in how communities may respond to climate change, rather than mapping their current vulnerability', it 'becomes vital to *cast the analysis across all these scales at once*' (C28/2009: 13; emphasis added). Extending the concern of the contextual discourse with the significance of the political, economic, social and other dimensions of the broader context in shaping both vulnerability and adaptive capacity, the construction of the role of the enabling environment in the discourse of adaptive capacity offers a specific interpretation and configuration of responsibilities and roles and dynamics in a context shaped by tensions around issues of community development, autonomy and resourcing, as I discuss in Chapter 7.

The emphasis on *change* in the discourse of adaptive capacity, in which changing climatic conditions are seen to make adaptive practices on the basis of both historical experiences and prediction of the future unreliable and potentially maladaptive, exists alongside and in tension with a widespread emphasis on the traditional cultural resources within communities in texts about Indigenous adaptation. As what has been experienced as 'normal' recedes into the past, voices in the adaptation space are increasingly cautioning that traditional knowledges and practices can no longer be relied upon, calling Indigenous adaptive capacity into question, as I introduced above. Chapter 6 examines how Indigenous resilience in this discourse is therefore cast less in terms of traditional cultural knowledges and practices, and rather more as a capacity to endure change by strategically engaging with novel circumstances, 'adapt[ing] and adopt[ing] new technologies as they became available' (C71/Dhimurru 2015: 38), for example. This reframing of Indigenous adaptive capacity draws on an existing discourse of hybridity which recognises the reality that Australian Indigenous lives are lived in and between multiple worlds, as I discussed in the previous section. It also belongs to the emphasis in the discourse of adaptive change on adaptation as a continuous process of experimentation and evaluation in which the adaptive agent navigates an adaptive path into the future by actively choosing between persistence and change. The capacity to do so that Indigenous peoples have demonstrated throughout histories of environmental change and colonisation is represented as the unique strength that they bring to the challenges of climate

change, and the basis of the potential for transformative adaptation into the future.

### *Survival into the future*

With the discourse of adaptive capacity directing attention to the capacity for change demonstrated by indigenous peoples in their survival, often despite significant upheaval, into the present, it feeds into a trend in the international climate change research and governance agendas that can be seen in some respects to have sought out and made room for indigenous knowledges and voices from around the world. In this discourse, Aboriginal and Torres Strait Islander peoples are presented, and have presented themselves, as having a natural ability to adapt. In their NCCARF report on, Bird and colleagues observe an 'overall feeling' among community members that 'Aboriginal people always adapt, naturally', with one informant stating that they '*adapt their behaviour to whatever environment they're presented, and they're very good at it. They just live with it*' (C53/Bird et al. 2013: 188; emphasis in original).

In representations of Indigenous adaptive capacity, European colonisation of the Australian continent is decentred and repositioned as but one chapter in this history of survival. And it is necessarily a story of survival for, defined as they are largely in terms of prior occupation of a territory, Indigenous peoples have by their definition survived colonisation (Lindroth and Sinevaara-Niskanen 2016). The discourse of adaptive capacity highlights how adaptive capacity has continued to be demonstrated throughout – and indeed enhanced by – the experience of colonisation: 'We must remember we are the most resilient people; we have had over 200 years to practice resilience' (C61/NAIEF 2013a: 21). No less important than traditional practices, then, are the strategies and resources employed by Indigenous peoples to negotiate life in settler colonial Australia. Accordingly, some of the changes since colonisation are framed in positive terms and as indications of increased adaptive capacity, as is captured in the view of Kanpi-Nyapari community members that 'there was a lot of dust at times when it was very dry, but the people just go into their houses. We have houses now so it is not a problem' (C41/AWNRMB 2012: 132). Indigenous peoples are identified as being proficient in strategically combining traditional practices with elements of modern,

Western life. In their NCCARF report, Horne et al. argue that a 'bi-cultural' identity positions Alice Springs town camp residents well to adapt to changing circumstances (C57/2013). For this reason it is seen as essential for children to acquire the ability to negotiate both the Indigenous and non-Indigenous worlds, as stated by a resident of Maningrida: *'because that's what make[s] them strong. If we have the best of both worlds'* (C53/Bird et al. 2013: 159; emphasis in original). This is seen to place Indigenous peoples in good stead to continue to negotiate these combinations and compromises in a changing climate.

Indigenous communities are in these ways attributed in this discourse a unique subjectivity. Nigel Clark calls this 'Aboriginal cosmopolitanism', which he describes as the 'disposition of all those who understand the capacity of their worlds to deterritorialize well enough to know that these events can make strangers of any of us; and who live accordingly' (2008: 742). By deterritorialisation, Clark refers to the possibility that 'you don't have to leave home for your world to become strange; your world can leave you' (741). This reflects the idea of displacement in place, without movement, developed by Tony Birch, as cited in my discussion of contextual vulnerability above. The contrast between the two representations of the same idea – that climate change might be causing country to become foreign to indigenous peoples under their feet – is an illustration of the distinction between a contextual reading of vulnerability and the perhaps more optimistic framing by Clark of an indigenous capacity to adapt that is unique and valuable.

The representation of Aboriginal and Torres Strait Islander peoples as particularly adaptive, forming a counterpoint to the representation of Indigenous vulnerability derived from a contextual reading, is considered to be an empowering one in its optimism. It looks forward to what can be achieved as Indigenous peoples, entering a new chapter in a longer history, continue to adapt to the changes around them in a process that they themselves define and drive. The long view of history taken in this discourse means that, as I argue further in the following chapter, the erosion of traditional culture by colonisation or climate change is not considered an intractable problem, because the discourse of Indigenous adaptive capacity locates adaptive capacity not so much in the substantive content that Indigenous peoples claim as part of their identity, but in Indigeneity itself and the relations of Indigenous people to their land. In doing so, however, it recovers

something of the functionalist understanding of human adaptation of early cultural ecology and ecological anthropology, understanding Indigenous adaptation as a natural and necessary process that occurs outside of meaningful scales of human history.

#### **4.5 Conclusion**

Based on analysis of a corpus of texts related to Indigenous adaptation, this chapter has examined the ways in which the international discourses of adaptation research and practice appear in Indigenous Australia, generating conflicting representations of vulnerability and adaptive capacity. I have argued here that these conflicting representations cast Indigenous peoples in biological and historical terms, reflecting the 'dual position' discussed previously. This is the basis of my analysis of the biopolitics of Aboriginal and Torres Strait Islander adaptation, and how the discourse of adaptive capacity, in its distinction from the contextual discourse, renaturalises the process of human engagement with environmental change at this specific site.

I began this chapter by situating these representations in their historical discursive context, discussing the ways that Australia's first peoples were represented by their colonisers as outside of time and place and how this set the challenge for Indigenous peoples, in later seeking recognition and rights, to establish their history and presence in the continent's precolonial landscapes. While Indigenous peoples have achieved victories in this struggle – not least an expanding recognition of their relationship with the natural environment and a lauded role in climate change response – this has been in large part on the basis of a strategic construction of Indigeneity that defines it in essentialist terms as an identity more continuous throughout history than it is discontinuous. In this sense, while the presence of Indigenous peoples in the environment is now firmly established, the deeper question of how Indigenous peoples are to be positioned in history continues to be approached in different ways that can be seen surfacing in discourses of climate change adaptation.

The contextual discourse is adamantly historical, reading Indigenous vulnerability as a product of the particular course of Australia's colonial history, and defining the prospects for adaptation within this context. The discourse of adaptive



capacity optimistically takes as a starting point the capacity for adaptation that Aboriginal and Torres Strait Islander peoples have demonstrated throughout a long history of survival of both environmental change and the upheavals of colonisation, placing a great deal of emphasis on the process of change through time that is made possible by the unique relationships of Indigenous peoples with their natural environments. However, as I argue on the basis of the analysis set out in the rest of the dissertation, this process of adaptive change is constructed in the discourse of Indigenous adaptive capacity in the terms of the functional interaction of the living organism and its environment that is at the evolutionary biological foundations of the theoretical framework of the social-ecological system. Caught between these historicising and biologising discursive currents, the discourse of adaptive capacity constructs a natural process of change that is, paradoxically, cut loose from its moorings in an historically specific site. In doing so, it reinvigorates an essentialist construction of Indigenous peoples as timeless, with a capacity for adaptation that is naturalised as inherent, at the same time that it refers to a history of many millennia. The following four chapters examine various dimensions of the adaptive capacity attributed to this adaptive Indigenous subject, and the political implications as Aboriginal and Torres Strait Islander communities negotiate what living with the impacts climate change might mean for them.

## **Chapter 5: The adaptive potential of caring for country**

Indigenous cosmologies around the world have garnered increasing attention for the sense of connection to land that they typically feature, a connection widely considered to hold valuable lessons in sustainability for non-indigenous people confronting climate change and other environmental problems. This connection to land – referred to as country in the Aboriginal and Torres Strait Islander cultures of Australia – is a core part of the discourse of a unique adaptive capacity that has come to dominate the discursive space of Indigenous adaptation, as I argued in the previous chapter. This discourse includes a political rationality that takes the subject of adaptation governance to be the Aboriginal or Torres Strait Islander community on country, constructing it as a social-ecological system, and representing Indigenous identification with country in the holistic terms of the systems ecological discursive framework. It would seem to offer a promising basis for Indigenous communities to now work towards long-standing aspirations centred around caring for country, building upon their struggle for land rights.

I argue that while the discourse of Indigenous adaptive capacity, which defines what is possible within the biopolitical site of Indigenous adaptation, is generating opportunities for Indigenous peoples on country in the context of climate change, it also threatens to constrain what Indigeneity can mean in this context. Grounded in a connection to country that is interpreted in this discourse as constituting the relational dynamics within the living system, and as having withstood the effects of dispossession and removal from land, this unique adaptive capacity is constructed as an inherent part of the identity of Indigenous peoples. Through this construction of an essential connection to country, this discourse naturalises adaptive capacity, obscuring a more historical reading of Indigeneity and Indigenous vulnerability. I argue in this and the following chapters that this

discourse tends to disconnect the process of adaptation from the context in which it occurs, precluding considerations such as the material effects of dispossession.

In the first section I describe how a unique Indigenous relationship to country has been interpreted as exemplary of the holism of the social-ecological system and therefore as a foundation for the sustainability of the Earth system through climatic change. I then describe in more detail those elements of an Aboriginal and Torres Strait Islander ethic of caring for country, and an emerging movement of Indigenous peoples living and working on country, that have formed the basis of a governmental programme of Indigenous adaptation. The ways that adaptation is expected to be achieved through caring for country is the topic of the second section. The third section then explores in more depth how an inherent adaptive capacity is constructed as consisting in the relations, underpinned by an ethic of care, of the community on country. Finally I argue that this construction of adaptive capacity, which takes it to consist not in any given adaptive knowledges or practices but more fundamentally in these relations, moves beyond the ahistorical trope of tradition but redefines an essential Indigenous identity at a deeper level in terms of an inalienable connection to country.

### **5.1 A cosmological sensibility**

Indigenous adaptive capacity is considered to be derived from the connection to country that is constructed as being at the heart of a unique Indigenous worldview now widely celebrated as environmentally sustainable. The ethics of caring for country is of interest in the discourse of the social-ecological system to the extent that it is seen to mirror the centrality of interconnectedness to ecological theories of the system. It is taken to constitute a key to adaptation as well as, more broadly, a means to overcome the 'crisis of disconnection' in Western culture to which contemporary environmental problems are attributed (Pretty 2011).

#### *Connection and disconnection*

The discourse of the social-ecological system is, as described in Chapter 3, motivated by an interest in rethinking the relationship between humans and

environment by positioning the former as part of the larger whole that is the Earth. Proponents of Earth system science express the hope that a better understanding of how the human and non-human parts of the Earth system are intertwined and interdependent would form the foundation of a new era of sustainability and stewardship (Schellnhuber 1999; Fischer et al. 2015). Sustainability is understood here to be the effect of a balance in relations between these parts of the single whole, which implies that all parts exist within parameters determined by the whole. A failure to respect environmental limits represented by these parameters and the subsequent loss of balance in the system has proved, it is argued, to the detriment of both people and the natural environments (Brown 1987). Sustainability is taken to 'stand [...] for a society in which these failures have been overcome – a reconciled society' (Brown 2016: 123). A systems ecological perspective is seen to advance this project of sustainability by 'provid[ing] a new vision of the earth as a system of interconnected relationships' in which humans are but one part of 'a web of life' (Berkes 2018: 2).

This 'new vision' in fact belongs to a longer tradition of environmental thinking in which holism appears as the central logic of systems theoretical depictions of ecological dynamics and interactions. The 'web of life' to which Berkes refers is akin to the 'idealistic' expressions of holism by the organicist school of early twentieth-century ecology that I described in the opening sections of this dissertation. Working in this tradition, Alfred North Whitehead argued, for example, that it was 'only by working closely together and creating tight-knit communities' that organisms, humans among them, can 'fully develop their creative potential and adapt their environment to their own needs and desires' (cited in Keulartz 1995: 128). According to this holistic view, a society characterised by a disconnection of its parts from one another, and of humans from their environment, would not be able to sustain itself. This perspective would later inform radical environmental critiques of Western modernity, such as those of deep ecology and ecofeminism, and the environmental movement that emerged in the 1960s and 70s (Keulartz 1995).

Although, as I described in Chapter 1, it was from the organicist view that the 'pragmatic holism' of the concept of the ecological system sought to distinguish

and distance itself, the current discourse of the social-ecological system recalls elements of this idealistic holism and radical environmental critique. Crucially, the vision of sustainability articulated in contemporary discourses of the social-ecological system, including in Earth system science and governance, appears to present a challenge and an alternative to the 'disconnection' that is seen to define Western modernity. While Earth system science is of course itself part of the modern scientific tradition that is an agent of this disconnection, the logic of the connection and integration of the social-ecological system has become a powerful one in discourses of adaptation. I argue that it shapes, via the discourse of adaptive capacity, the field of possibilities for Indigenous peoples in the context of climate change.

The critique of 'disconnection' is one that Indigenous peoples have also long been making (Arabena 2015). The concept of caring for country articulated by Australia's Indigenous peoples has been seen to represent a direct and deeply political challenge to the 'nonsensical' (Bawaka Country et al. 2013: 188) separation of human and non-human beings that is presupposed by non-indigenous land management approaches (Berkes 2018; Howitt 2001) – or what Deborah Bird Rose refers to as the 'singularities of mainstream Western paradigms' (Rose 2005). The problem of climate change is accordingly diagnosed by Aboriginal fire ecologist Victor Steffensen as one of 'disconnect[ion] from the land': 'Climate change seems to be identified as a new threat by the institutions, taking away that basic truth that people are just disconnected from the land' (2013: 11). It is argued that indigenous worldviews that refuse to distinguish the human and the environmental realms offer a crucial corrective to the resulting crisis of disconnection.

With the growing recognition of indigenous environmental stewardship that I discussed in the previous chapter, this critique appears now to be finding a receptive audience. Australian commentator Clive Hamilton claims, for example, that 'the grounding of certain Indigenous ontologies holds something that ought to be recovered in a new Anthropocene way of being beyond modernity, and that is their *cosmological sensibility*' (2017: 105; emphasis added). This 'cosmological sensibility' is what Griggs et al. in a NCCARF report refer to as 'a comprehensive and integrative way of seeing the land and appreciating its holistic complexity'

(C55/2013: 38). Such a sensibility is increasingly seen in dominant discourses of systems ecology and climate change as valuable, if not essential, if humans are to address the fallout of 'devastating mismatches between societal dynamics and ecosystem dynamics' and achieve sustainability (Yorque et al. 2002: 433).

A capacity for adaptation is seen to inhere in these holistic aspects of Aboriginal and Torres Strait Islander and other indigenous cosmologies. Shifts in disciplines such as anthropology and ecology that have contributed to the new representations of indigenous peoples as uniquely sustainable have drawn attention to the capacity for adaptation that is derived from the connectedness that they are seen to exemplify. In the 1960s a view emerged in anthropology that 'sustainable adaptations always limit growth to levels below carrying capacity and that hunter-gatherers alone had managed this simple solution to responsible living' (Garvey and Bettinger 2014: 10). The application of the concepts of systems ecology to these societies was seen to allow hunter and prey dynamics, for example, to be viewed within 'a larger socio-political and ecological context', revealing the previously unrecognised 'complexity of these relationships' and their sustainability (Lu 2010: 6). Accordingly, some theorists of social-ecological systems propose that some indigenous traditional practices and cultural norms appear to 'be similar, or have parallels, to complex systems theory' (Robards and Alessa 2004: 424), and Indigenous peoples have come to be theorised as complex adaptive systems (Berkes and Folke 2001), or 'indigenous biocultural systems' in the terminology of one scholar (Apgar 2010).

The view that indigenous and other 'traditional' peoples have a unique capacity for adaptation has become a powerful one and they are increasingly seen to have important lessons in adaptation to offer non-indigenous peoples. Within the adaptation literature, concern has been expressed that among Westerners there is a 'lack of certain cultural resources' required for adaptation, which is associated with the 'cultural inadequacy' of the distinction between nature and culture that permeates Western post-Enlightenment thought (Heyd and Brooks 2009: 277). This distinction is seen to inhibit the 'internalisation' of lessons that can be drawn from interactions with the environment, such as the experience of natural disasters, that occurs in more 'primitive' cultures, where these lessons tend to be retained in collective memory or become inscribed in habits, rituals and myths. In

looking to 'traditional', including indigenous, cultures for insights about sustainability, the dominant systems ecological discursive framework mirrors perspectives from within the more 'idealistic' ecological tradition against which systems ecology first positioned itself. From outside of the mainstream of environmental thinking at the time, ecofeminist Vandana Shiva claimed in 1989, for example, that 'the intellectual heritage for survival lies with those who are experts in survival' (224) and that only they have the knowledge and experience 'to extricate us from the ecological cul-de-sac that the Western masculine mind has manoeuvred us into' (Shiva 1989: xvii). The argument about Western 'cultural inadequacy' by Heyd and Brooks two decades later might be read as an echo of Shiva's, underlining that the 'new vision' offered by the discourse of the social-ecological system belongs to a longer discursive history – one that, it must be remembered, is anything but politically neutral.

At the heart of the construction of the adaptive Indigenous subject is a unique 'cosmological sensibility' and 'special relationship to nature' that is seen to give rise to the right 'cultural resources' for survival (Lindroth and Sinevaara-Niskanen 2016). Survival through anthropogenic climate change, it is now maintained in the discourse of adaptive capacity, depends on the connections that maintain balance in the relations between what is understood as the interdependent parts of a whole. This chapter shows that it is the reciprocal relations maintained by the Indigenous ethic of caring for country which are constructed and governed as the basis of the adaptive capacity of Aboriginal and Torres Strait Islander peoples.

### *Country*

In the cosmologies of Aboriginal and Torres Strait Islander peoples, the relations between humans and the environment are commonly characterised by an ethic of care for country. Rather than seeking to alter environmental conditions to exclusively human ends, people take their place among 'multiplicities of species and benefits interacting in entangled systems of relationships' (Rose 2005: 297), with 'humanity' viewed as 'just a small part of life' (Watson 2009: 37). The ethic of care for country makes unthinkable exploitation or degradation of the environment and is also seen to enable the capacity to endure through obstacles and scarcities presented by the environment. It thus underpins the sustainability

of the 'cosmological sensibility' now increasingly attributed to Australian Indigenous peoples, like others around the world, and is, I argue, the object of the governmentality of Indigenous adaptive capacity.

The lack of distinction between humans and environment in this worldview unites them in relations of mutual care, as captured in the slogan 'when we care for country it helps our country to take care of us' that appears in the National Caring for Country Strategy document (C47/IAC 2012: 4). The systems of totemism that govern many aspects of life in Aboriginal communities, for example, are described by anthropologist Deborah Bird Rose as consisting of 'bonds of mutual life-giving' (Rose 2005: 296) based upon a sense of 'common heritage and kinship' (Suchet 2002: 145) among the human, animal and inanimate elements of country. These relations of care sustain life. In the words of Irene Watson, 'Aboriginal caring for the land is equivalent to caring for one's own body; it is an act of self-preservation and self-protection' (Watson 2009: 41). The relations of care between the various members of country are equal: maintaining strong social bonds and observing social rules (such as those associated with 'skin' systems) are essential to and inseparable from maintaining good ecological relationships (Muir et al. 2010).

What is of benefit to one element of the unified whole of country is seen to be of benefit to all. For example, it is noted in some of the texts analysed that the mosaic pattern yielded by traditional burning was not necessarily an explicit or primary objective of the traditional use of fire (C41/AWNRMB 2012; C65/Prober et al. 2013). Rather, it was likely to have been 'a default outcome of cultural and hunting practices associated with people migrating and hunting regularly across large expanses of country' (C41/AWNRMB 2012: 74) for traditional burning was undertaken to serve 'physical, social, cultural, and spiritual, as well as ecological, needs' (C03/CLC n.d.: n.p.). While there has been a long-running debate about traditional fire practices, their function and their role in maintaining ecological health (Head 2000; Gammage 2011), the key point here is that it is stressed in the corpus about adaptation that the ecological benefits were at most *only part of* a broader understanding of the benefits of burning. On this understanding, what is good for people is good for all parts of country, and vice versa.



The ethic of care for country is defined by a responsiveness and willingness to accommodate rather than resist or control environmental change, which is frequently constructed as a key point of difference from dominant non-indigenous worldviews. It is the basis of a sustainability that finds expression as the principle of only taking what is needed and only needing what is available, as in the statement that, 'this care in turn sustains our lives – spiritually, physically, socially and culturally – much like the farmer who lives off the land' (C18/AHREOC 2008: 116). Where 'Western culture emphasized changing the natural world wherever it resisted human manipulation', 'Indigenous cultures, on the other hand, choose ways of adapting to the limits of the natural world' (Wilmer 1993: 207). This willingness can be discerned in the ideas of 'sensitivity' and 'learning to live within limits' in the following excerpt from an NCCARF report:

'The First Nations of Australia have survived the highly variable and often extremely harsh conditions on the Australian continent [...] by learning to live within the limits of sparse natural resources. They could only do this by developing a deep understanding of the rich complexity of the environment, a strong connection and sensitivity to land, and a strong moral imperative to look after it' (C55/Griggs et al. 2013a: 37).

This willingness to accommodate prevailing conditions aligns with the systems ecological understanding of the responsiveness and flexibility of a complex adaptive system in changing conditions, and is thought to yield an adaptability that is the foundation of the discourse of Indigenous adaptive capacity in the context of climate change.

#### *The caring for country movement*

Discourses of Indigenous adaptation identify potential for climate change adaptation in the engagement of Aboriginal and Torres Strait Islander peoples in environmental management across the continent. Climate change thus lends an additional impetus to the existing pursuit of opportunities in this space, building on efforts to achieve recognition of stewardship of Australia's precolonial landscapes, as described in the previous chapter. This has taken the form of a 'politically charged social movement' that has come to be known as 'caring for

country' (Altman 2012: 213). Caring for country refers broadly to a community-based development and natural and cultural resource management framework that enables Aboriginal people to live on, work on and care for land reclaimed through native title and land rights, or accessed through protected area management agreements and other, including joint and cooperative, management programmes (Altman 2012).

As more and more Australian Indigenous claimant groups have been granted title to their traditional lands, many have returned to live on or near their countries, most notably in the outstation movement of the 1970s. Former head of NAILSMA Joe Morrison states that 'it was inevitable that with land rights Indigenous people would return to live on their country because land looms so large in our worldview' (Morrison 2007: 257). With approximately one quarter of the Australian continent now held under some form of Indigenous title, Indigenous groups are seeking ways to live on the land while also being in a position to make a living from it (Altman 2012; Dodson and Smith 2003). The self-reliance promised by this vision of caring for country is therefore seen as a vehicle for the autonomy and self-determination that Indigenous peoples have long sought. This is captured in a statement of the objectives of the Kimberley Land Council, which include 'getting back country, looking after country, and getting control of the future' (C07/KLC n.d.: n.p.).

Given that 'most aspects of Aboriginal community life are closely connected to the land and sea', an 'active role in their management' is seen to hold the potential to meet a variety of community aspirations (Kerins 2012: 30). On this approach, traditional cultural practices such as that of gathering bush food, for example, tend not to be seen to serve exclusively social or economic or environmental purposes, but rather all three. It is argued that health is enhanced through the physical activity of getting back onto country and the opportunity to gather and consume nutritious bushfoods, income may be generated from the market opportunities created, while at the same time the health of ecosystems are maintained (C25/EPNRM 2009a). The sustainability and endurance of human communities and their natural environments are thus ensured, as these practices of caring for country realise the aspirations and interests of both parts of this

unity as well as, by extension those of the whole – resembling the logic of the ecological system.

Caring for country initiatives include what is referred to as the hybrid or culture-based economy, which provides opportunities, for example, to generate income through the delivery of conservation services or the sale of bush products (Altman 2007). The hybrid economy enables Indigenous people to ‘build on their comparative advantage in providing customary and commercial services’ (C29/NALWT 2009: 3), a comparative advantage that is constructed as consisting in culture and unique knowledges and skills grounded in the ethic of care for country. One of the most significant achievements of the caring for country movement, and one that is appearing as an important element of climate change adaptation discourses, has been the establishment of ranger programmes in protected areas around Australia. These programmes include tasks such as the control of invasive species, monitoring of endangered native species, revegetation, surveillance of illegal fishing, fire and water management, cultural heritage management and involvement in the tourism industry (Altman 2012).

Caring for country, like other indigenous culture-based development initiatives around the world, is considered to ‘provide the means by which indigenous peoples might sustain themselves [...] in the modern world’ (Engle 2010: 183). Amidst current calls for climate change adaptation as a response to the environmental, economic and social challenges of the modern world, it would appear that in a sense this movement has found its time. Caring for country is considered the primary site of Indigenous adaptation and the basis for an Indigenous adaptive capacity – a capacity taken to consist in the relations of an interconnected human and environmental system – as I explore throughout the rest of the chapter.

## **5.2 Adaptation through caring for country**

Caring for country appears in both the contextual and adaptive capacity discourses as an important sphere of Indigenous adaptation. Its adaptive potential is constructed in these discourses in a number of closely connected ways. One is the management of the impacts of climate change on natural ecosystems, which can occur through the informal practices of communities living on country as well

as through more formal ranger programmes. Caring for country, according to Bird and colleagues, is a means of addressing a number of biophysical management issues in a changing climate, including 'species loss, increasing numbers of mosquitoes [and] loss of local food resources' (2013). Many of the activities carried out by ranger programmes are also seen as increasingly important in the context of a changing climate. These include fire management; water management; addressing trends such as desertification and coastal erosion; protecting threatened species such as turtles, dugongs and sea grass; and combatting invasive species such as buffel grass.

Indigenous knowledge is also increasingly valued for the local observations of historical climatic changes that it can offer, and is the object of expanding initiatives by climate researchers to gather and record oral accounts of these histories. In a report about climate change impacts in northern Australia by Green et al., a regional stakeholder is quoted as saying, 'I was not surprised, but thought it of note that the Indigenous folk of today at Maningrida could confidently speak of the effects of sea level from 12,000 years ago. Seems like such a valuable learning is there to be had if we just engage Indigenous people properly' (C28/2009: 58). Australian Indigenous knowledge about climate change events in the past is described as an 'untapped resource' in the IPCC's Fourth Assessment Report (Hennessy et al. 2007: 523)

The role of Indigenous people in monitoring and reporting manifestations of current anthropogenic climate change is also considered extremely valuable – and accounts for the majority of research efforts on mitigation and adaptation in Indigenous communities, according to Leonard et al. (2013). Monitoring occurs informally, through day-to-day immersion in country, and it is at least partly for this reason that vulnerability workshops always start with questions about the changes that indigenous peoples have observed in their environment. NAILSMA argues that Indigenous peoples could fill 'an important role as "eyes and ears"', making it in the 'national interest or Indigenous peoples to use/access country' (C34/NAILSMA 2010: 22). Baseline data in particular is important as a means of tracking and quantifying future changes; without it, impacts will remain 'poorly understood' (C58/Leonard et al. 2013: 2).

The value of access to information about past and present environmental changes through Indigenous knowledges appears in a variety of the texts in the corpus (C35/NRMMC 2010; C45/DSEWPC 2012a; C25/EPNRMB 2009a; C41/AWNRMB 2012). Documenting and using indigenous knowledge, and involving Indigenous people in monitoring climate change impacts, has been described as being consistent with 'a human rights approach' to climate change (C18/AHREOC 2008). Indigenous practices and traditional ecological knowledges are now commonly brought together with Western science and technology in what is celebrated as a 'two-way' or 'two toolbox' 'intercultural' approach supported in various ways by Australian governments (Altman 2012).

Caring for country is also held to offer important benefits for people, providing the kinds of possibilities for human and economic development that is underlined by a contextual approach to adaptation, as was discussed in the previous chapter. Framed as 'ecosystem-based adaptation', and building off the community-based NRM model, this involves the 'sustainable management, conservation and restoration of ecosystems, as part of an overall adaptation strategy [with] multiple social, economic, and cultural co-benefits for local communities' (CBD 2010: n.p.). Among these co-benefits are the employment provided by ranger programmes, which can address a lack of employment opportunities in many remote areas, and the income generated by fire abatement schemes.

In the caring for country model, NRM includes but is not limited to formal ranger programmes, as it can take place through everyday practices, such as bushfood harvesting. This is an important point as caring for country initiatives look set to further expand in the context of climate change, for it gives rise to a tension in how Indigenous peoples articulate the centrality of caring for country to their identities, on the one hand, and the need for adequate support and resourcing, on the other. In other words, although it is stressed that NRM is not confined to formal ranger programmes, at the same time there are calls within the adaptation discourse to make sure that rangers are adequately compensated for their labour, as currently 'much employment in communities is part-time, impermanent or paid via Community Development Employment Projects/Centrelink' (C41/AWNRMB 2012: 121). I consider the significance of this tension further in Chapter 7.

Caring for country is also considered to further adaptation in a more fundamental sense. This is the sense in which it is hoped that a return to country would literally undo the processes that generated vulnerability in the first place. Like indigenous peoples all over the world, many Indigenous Australians see returning to their traditional lands as the only way to ameliorate the disadvantage evident in a range of health, educational, income and other indicators that has been brought about, directly and indirectly, by policies of removal from land. The latter include forced relocation, removal of children from their families, changes in land tenure and the introduction of legislation that limits mobility across the country. This idea echoes throughout many of the texts analysed. It is argued that 'restitution of [...] relationships with the land may contribute to reducing the vast differences in social and economic outcomes between Indigenous and non-Indigenous Australians' (Green et al. 2012: 314). They stress 'the importance that access to water and the effective and equitable participation in land and water management have in improving Indigenous Peoples['] lives and livelihoods and "Closing the Gap"' (C29/NALWT 2009: 32).

By ameliorating some of the manifestations of socio-economic disadvantage and the lingering trauma of colonisation, rekindling connection to land is expected to play an important restorative, rehabilitative function in Indigenous communities. Texts in the corpus note that 'it was felt that an opportunity like this [a ranger programme] could help the younger members of the community avoid drug and alcohol problems' (C36/O'Connor and Prober 2010: 43), for example. Indeed, a discussion of the benefits of caring for country notes that an evaluation of the national IPA programme found that 'almost three-quarters [of programs] also report benefits for school engagement, reductions of substance abuse, and more functional families' (C40/Hill et al. 2011: 37). An NCCARF report cites studies that 'strongly indicate that living on one's homeland and being involved in customary harvest are positively correlated and also relate to high levels of self-reported good health and happiness' (C64/Petheram et al. 2013: 9). These findings are cited to suggest that it is only by restoring what was lost that the damage of the past can be undone (C63/Nurse-Bray et al. 2013; C53/Bird et al. 2013; Berry et al. 2010).

In these ways caring for country is represented in the corpus of texts analysed to offer a promising platform for the engagement of Aboriginal and Torres Strait Islander peoples in climate change adaptation. It offers benefits for land and communities alike by aligning initiatives to address the impacts of climate change with existing commitments to work to restore the health of natural landscapes and achieve health, economic and other development goals. I argue in the following section that the discourse of adaptive capacity goes beyond these constructions of the adaptive potential of caring for country, diverging from a contextual reading of Indigenous vulnerability and its focus on the prospects for community development.

### **5.3. Connection to country as adaptive capacity**

In addition to promising to undo the damage of the past in the relatively pragmatic ways outlined above, a return to country in the discourse of Indigenous adaptive capacity is seen to achieve something more fundamental. It is expected to restore a positive quality represented as once shared by all Indigenous peoples: adaptive capacity. I argue in this section that this capacity is constructed in systems ecological terms as an inherent property, depleted but never lost altogether, that consists in the relations that bind together the community on country. This construction is the thread that connects the elements of the governmental vision of adaptation that I explore in more detail in the following chapters.

#### *An inherent adaptability*

In discourses of Indigenous adaptation, references to adaptive capacity are frequently marked by its absence or depletion, for disrupted relationships to land are considered to mean that people lack the capacity to adapt to the emerging challenges of climate change. For instance, it was argued by an Indigenous informant to a NCCARF report that '*people in urban/peri-urban area[s] do not have the ability to read country, like how the old people survived climate change in the past*' (C59/Low Choy et al. 2013: 32; emphasis in original) and that, 'while the people are restricted in their access to traditional lands and the practice of [...] knowledge, their capacity to manage against potential climate risks is compromised' (C60/Memmott et al. 2013: 114). For this reason, there is

widespread concern that young people may be out of touch with their culture and connection to country and therefore lacking 'traditional survival knowledge':

'It was widely felt that due to the decline in cultural involvement, youth were no longer as in-touch and knowledgeable about the environment as they had been, which also has a negative influence on their well-being [...] As youth were less exposed to the environment, they were unaware how the environment could take care of them. They were, therefore, considered to be less resilient.' (C53/Bird et al. 2013: 156)

In this discourse, establishing access and rebuilding connection to country is therefore expected to directly yield increased adaptive capacity, with benefits for people and country. NAILSMA observes that, with expanding Indigenous NRM initiatives in northern Australia, 'traditional land management is being brought back, strengthening people's understanding and capacity to deal with these changes and as a way of helping to fix the damage being done by climate change' (C34/NAILSMA 2010: 8). Caring for country is therefore welcomed in texts by a variety of actors in this space, both Indigenous and non-Indigenous, as a platform on which to restore the historical adaptive capacity of Indigenous peoples and enhance it into the future, tackling all manner of contemporary problems, only one of which is climate change. In the words of a Port Augusta community member, '*bring the land back, bring it back to life! Hopefully then will help with climate change, with everything*' (C63/Nursey-Bray et al. 2013: 78; emphasis in original).

As I described in the previous chapter, one of the ways in which Indigenous peoples are considered vulnerable is associated with the extent that this connection to country has been tried and undermined through various deliberate and less deliberate tactics of the state. It is not denied by Indigenous peoples themselves that the connection to country has been and continues to be eroded by historical and ongoing processes of dispossession. However, in the context of the requirement that Indigenous peoples demonstrate unbroken connection as the basis of land rights and other forms of recognition in Australia (Povinelli 1998), a great deal is at stake in actively maintaining and demonstrating this connection.



The Dhimurru rangers of Arnhem Land note that their participation in NRM, for example, depends on it. They state that, ‘the future of [the] IPA will depend on the capacity of future generations *to maintain and practice the connection between Yolŋu culture and country*, together with knowledge and expertise in contemporary land and sea management’ (C71/Dhimurru 2015: 82; emphasis added).

However, pushing back against these requirements and the various ways in which Indigenous identity has been prescribed and policed by settler Australians (Attwood 1992), there is an insistence that this connection can remain even where people have been removed from country and may be living far from their traditional lands. ‘The key message from considering the impact of Australia’s colonial history on the management of country’, scholars have argued, ‘is that *personal separation does not necessarily spell loss of commitment* to looking after resources in the proper way’ (Baker et al. 2001: 16; emphasis added). This commitment can be seen in statements such as one by the Central and Northern Land Councils that, despite all the changes brought by colonisation, ‘nothing has changed our identity with our land. Our land is our life [... It] provides our identity’ (1994, cited in Maddison 2009: 77-78). Importantly, this makes it possible for the discourse of adaptive capacity to maintain that, as long as the connection and commitment to country which is so central to Indigenous identity remains, adaptive capacity – or at least the *potential* for adaptive capacity – exists.

This idea appears in the corpus of texts analysed in the construction of Indigenous adaptive capacity as something that exists in latent form, to be recovered by rebuilding connection to culture and country. In this discourse, caring for country addresses vulnerability to the impacts of climate change *not only* by undoing the processes that have produced disadvantage in the present, thereby closing the generic development deficit represented by the ‘gap’ in socio-economic indicators. It goes beyond the contextual reading, in other words, to depict adaptive capacity as something *more* than merely the inverse of the vulnerabilities brought about by historical processes. In focusing on adaptive capacity as a property or potentiality shared by and unique to all Indigenous peoples, this discourse constructs it as something inalienable, something that can be depleted but not lost or destroyed altogether, as long as the possibility

remains of a return to country. It is a positive, substantive property that belongs to the nature of Aboriginal and Torres Strait Islander peoples. Even in unrealised, latent form it takes the shape of a particular kind of adaptive subject, one that contains implicit traces of the trope of the timeless noble savage that I discussed in the previous chapter.

It is this representation of an inherent Indigenous adaptive capacity that Leonard and colleagues invoke when they propose that climate change adaptation research in Indigenous communities attend not only to the effects of 'socioeconomic disadvantage' but also to 'how Australian Aboriginal people can adapt to climate variation and change' using their 'knowledge, skills and agency' (C58/2013). As discussed in the previous chapter, this is a shift in emphasis that is considered empowering. To the extent that Indigenous peoples participate in the construction of a natural, inherent Indigenous adaptive capacity, its deployment may be interpreted as a strategic engagement with essentialist representation of Indigeneity – extending, in the context of climate change, the constructions of traditional culture that have made possible native title and land rights claims.

#### *The adaptive community*

Reflecting the systems ecological construction of the interconnected whole as the foundation of sustainability, Indigenous adaptive capacity is taken to exist less in an individual person so much as in the relations of the whole that is community on country. This is apparent in the way that Indigenous adaptive capacity is represented as a property of the collective – a property that is, in other words, attributed to the community more than it is to any single individual. This is evident in the Australian corpus, echoing in obvious ways the popular and academic representations of Indigenous peoples in the holistic terms of the complex adaptive system that I discussed in the first section. I argue here that in the discourse of Indigenous adaptive capacity, it is accordingly through the Indigenous community as a whole that adaptation is governed.

The collective nature of this construction of adaptive capacity can be seen in one of the NCCARF reports analysed, which finds that residents of town camps on the outskirts of Alice Springs 'deal with heat and cold in a diverse variety of ways'. This diversity – which is a much-cited indicator of adaptive capacity in the

literature on social-ecological systems (Folke 2006) – is noted approvingly as ‘a sign of adaptive capacity’ (C57/Horne et al. 2013: 1). Such a characterisation makes sense only if it is the community as a whole, rather than any given individual engaged in more, or less, effective heating and cooling practices, that is taken as the unit of analysis and can be considered adaptive. The following excerpt about the Arabana people, who since European settlement have come to live in disparate locations mostly throughout South Australia and the Northern Territory, also shows that adaptive capacity is a collective property:

‘Arabana people are potentially less vulnerable to the impacts of climate change, as they have adaptive capacity to respond to this change. Part of this strength is evidenced by the fact that Arabana people from all across Australia came together in Port Augusta for an adaptation workshop, and collectively agreed on an adaptation program’ (C63/Nurse-Bray et al. 2013: 2).

Here it is the capacity to act as a collective, by coming together and agreeing on a common adaptation strategy, that is a sign of adaptive capacity.

The construction of adaptive capacity as a property of the community, as described in the previous chapter, positions the community as the locus and object of initiatives to build adaptive capacity. I argue that this constitutes one aspect of the specific political rationality that underpins the discourse of adaptive capacity as a programme of adaptation governance. In governance through the community, ‘solutions take the form of acting upon community dynamics’ (Li 2007: 232). The biopolitical literature has shown that community is ‘a sector brought into existence’ through this governance, ‘whose vectors and forces can be mobilized [...] in active practices of self-management and identity construction, of personal ethics and collective allegiances’ (Rose 1999: 176). Governance through community has proliferated in the wake of what Miller and Rose term the ‘death of the social’ – that is, the recession or mutation of political programmes and claims articulated in terms of the single social body of the nation state (2008). In contrast to the government of society, that of community operates through the interests and capacities of *different* groups of people, where community functions as ‘a fulcrum of personal identity’ and defines ‘new bonds of obligation and

responsibilities for conduct' (Miller and Rose 2008: 91). Scholars of biopolitics have explored the particular forms that this takes with respect to indigenous peoples, where 'the call for active local communities is an essential element in promoting the structural inclusion of indigenous groups' and pursuing various development objectives (Sinevaara-Niskanen 2015: 40; see also O'Malley 1998; Li 2007; Cameron 2012).

The adaptive Indigenous subject, when constructed as a collective in the ways I have described here, is the community on country, with country understood to consist of both human and non-human, animate and non-animate, members. As Nikolas Rose points out, it is through the discursive construction of the boundaries around any given community – the delineation of a particular group, in other words – that the community is 'brought into existence' (Rose 1999). The conception of community that features in the discourse of Indigenous adaptive capacity differs somewhat from the conventional understanding of community as a group of people, for here the natural environment is brought inside the boundaries of the human community through the discourse of country. As I explore in the following section, the construction of this community in the terms of the social-ecological system is associated with particular understandings of how people and environment relate and can and should act with respect to one another. I argue that Indigenous adaptive capacity is understood to be derived from, and to find expression, in the relationships of the members of the interconnected whole of community on country.

As I described in the previous chapter, the discourse of adaptive capacity looks to how adaptive potential can be expanded by fostering and activating what are constructed as the existing bonds and strengths in a community, as has been observed in other sites of the governmentality of community (Rose 1999: 142). The apparently progressive interest in harnessing the existing strengths of the community to build Indigenous adaptive capacity exhibits a paradox, however. In the words of Tania Murray Li, 'community is assumed to be natural, yet it needs to be improved [...] experts must intervene [...] to enhance it' (Li 2007: 232). This can be seen in the ways in which the governance of Indigenous adaptation presupposes resilience on the part of communities even as it is premised on the need to reduce their vulnerability.

Li describes some of the logics employed 'to contain the paradox' in discourses of community development in Indonesia, and these are worth citing in full for their striking resemblance to what can be seen in the discourse of Indigenous adaptive capacity in Australia:

'attempts to govern through community often elide what currently exists with the new versions being proposed, making it unclear whether talk of community refers to present or future forms. They locate the model for the perfected community in an imagined past to be recovered, so that intervention merely restores community to its natural state. Or they argue that they are not introducing something new, merely optimizing what is naturally present. Even when the object of desire – the authentic, natural community – is found to be intact, experts on community argue that it is vulnerable to degeneration because it lacks the capacity to manage change' (Li 2007: 233).

All of these approaches, which are not really separable, are evident in the characterisation of Indigenous communities as in need of measures to 'enhance their adaptive capacity' (C58/Leonard et al. 2013: 4) while adaptive capacity is simultaneously represented as inherent to Indigeneity. In this case the naturalisation of community occurs through the construction of Indigenous adaptive capacity in the terms of the social-ecological system. This adaptive capacity is then taken to consist in the interactions between the parts of this social-ecological system – or the members of the community on country that is the adaptive Indigenous subject – as I discuss below.

#### *The relations of country*

It is on and through the internal dynamics or relations of the Indigenous adaptive subject – understood here in the terms of the social-ecological system as the community on country – that the governmentality of adaptive capacity operates. Scholars of biopolitics have shown how the discourse of the resilience of the social-ecological system 'opens the most intimate recesses of life – the affective relations between people and their environments – to governmental intervention' (Grove 2014b: 206). Within this systems theoretical framework, resilience is seen

to be determined by how well ‘the complex of people and things that form a socio-ecological milieu relate to one another’ (Grove 2014b: 205). These relations are understood to give rise to resilience as an *emergent* property, which is to say that resilience emerges from them as an effect of the total relations of the system that is distinct from the parts of the system (Jervis 1997). Emergence implies that the aggregate outcome is of greater significance than the details of the local interaction (Capra 1988; Miller and Page 2007), an idea that is implicit when the holism of the social-ecological system is invoked. Given the emergent nature of resilience and other system properties, ‘resilience programming attempts to work on how elements within a system relate to each other, rather than the performance of individual elements themselves’ (Grove 2014b: 205). The focus of adaptation governance on these relations in both Indigenous and non-Indigenous communities in Australia is evident in a range of government texts. The National Strategy for Disaster Resilience, for example, stresses the importance of community ‘connection’, with one of its six ‘leadership messages’ reading ‘*connected communities are resilient communities* – connected communities are ready to look after each other in times of crisis when immediate assistance may not be available’ (C44/COAG 2012c: 9; emphasis added). Resilience is seen to be determined by ‘the level of social cohesion and strength of the local community culture’ (C04/COAG n.d.: 2). It is argued that ‘a high level of trust, cooperation and interconnectedness within communities promotes effective cooperation’ (C54/DIICCS RTE 2013: 29).

The ethic of caring for country described above is seen to underpin the unique adaptive capacity that is as an emergent property of Indigenous communities living and working on country. It positions all members of country, whether human or non-human, as parts of a greater whole bound together by relations of reciprocal care. In the discourse of Indigenous adaptive capacity, the potential to derive care from country in exchange for care of country – as captured in the slogan ‘when we care for country it helps our country to take care of us’ cited above – is seen to account for Indigenous resilience (C47/IAC 2012: 4). An Indigenous community member quoted in an NCCARF report asserts that ‘*in order for you to survive, you got to respect the nature itself, and in return the nature will respect you*’ (C53/Bird et al. 2013: 180; emphasis in original). The maintenance of

these good relations between people and their environments is seen to ensure the survival of the whole through the course of fluctuating conditions.

The social conventions associated with kinship among humans, likewise, institute Aboriginal principles of care into mechanisms of community support. For example, 'social support infrastructure' is described in many case studies as being 'based upon the "extended family" inherent in the traditions of Torres Strait Islander and Aboriginal peoples. There is a community acceptance that the community will *look after itself* to a great degree' (C66/TSC and TSIRC 2013: 18; emphasis added). This enables 'people [to] believe that they would have community support in an environmental crisis' (C60/Memmott et al. 2013: 5). The adaptive success of interactions with people outside of the community such as emergency workers is also seen to depend on the quality of the relationships involved, and it is argued that 'through developing and maintaining good and trusted relationships, good communication channels and understanding and respecting relationships, culture and country, even the most severe of emergencies can be managed and the community can survive' (EMA n.d. c; check the Kiwirrkurra stories). This was demonstrated when, for example, 'the younger natural leaders within the Warmun community [...] took charge and spread the warning quickly and efficiently' during flooding in 2011 (C58/Leonard et al. 2013: 112). Leonard et al. suggest that this was possible because 'these communities are *highly connected socially, with everyone knowing everyone or being family*, which is a real strength in communities and emergency services responding to disasters' (C58/2013: 112; emphasis added).

Many of these examples of purported resilience imply a self-reliance or self-sufficiency that is seen to be derived from the relations of country. Bird et al. argue, for example, that the resilience of some communities is increased by their remoteness, for they have no choice but to rely on the 'survival skills from their ancestors' (C53/2013: 138). Thus, 'notwithstanding the limitations imposed by the distance to emergency support, the community is essentially regarded as having the capacity to effectively respond to most situations from within its own resources. The community values in the area engender a significant degree of self-reliance, which brings stability, foundation and sustainability' (C66/TSC and TSIRC 2013: 18). Self-reliance has become a powerful and widely cited aspect of the

discourse of resilience, connecting neatly to neoliberal discourses of individual responsibility (Welsh 2014). It acquires a specific valence in the context of charged debates about whether Indigenous Australian communities should be moving away from 'welfare dependency' towards integration into the market economy and community self-sufficiency (Maddison 2009). As I explain in the following section, this idea of self-sufficiency originates in the autonomy and boundedness essential in the original conception of the self-organisation of the system.

The excerpts from the corpus discussed here illustrate the ways in which the discourse of adaptive capacity focuses on the positive emergent effects of relations between people and country. The identification by climate change researchers of adaptive capacity, rather than vulnerability, in many of these instances makes possible an alternative and more hopeful reading than that which might be offered in the contextual discourse. This appears explicitly in the NCCARF report by Tran and colleagues in the claim that the community at Kowanyama demonstrates '*a greater appreciation of, and resilience to, natural disaster events than their social profile might suggest*' when they utilise the 'bush subsistence' strategies employed by their ancestors who 'ha[d] to deal with natural hazards with very little intervening technology to shelter them' (C66/Tran et al. 2013: 87; emphasis added). Leonard et al. argue that emergency managers need to '*build on [the] human assets*' that were demonstrated in the Warmun flooding mentioned above to 'strengthen community capacity' (C58/2013: 112; emphasis added). I have argued in this section that the relations of community on country constitute the grounds for this optimistic reading of the adaptive capacity that Indigenous peoples already possess, as well as the target of the governmentality that would enhance it.

#### **5.4 The agency to adapt**

The adaptive capacity of the Indigenous adaptive subject is constructed as being grounded in the relations of community on country, as I described above. In this section I argue that the maintenance of these relations figures in this discourse as an end in itself, reflecting the centrality to the theory of the social-ecological system of the functional interactional dynamics of the living system, or what is referred to its organisation, as that which sustains life. The emphasis on the



adaptive potential of the ongoing process of these interactions, more than on that of any particular knowledges or practices associated with caring for country locates Indigenous adaptive capacity in an agency for change rather than in traditional culture. This amounts to a reconfigured essentialist Indigenous identity in the context of climate change – one that, I suggest, may open up avenues for engagement on country but may also hold negative repercussions for the politics of funding and resourcing in this space.

### *The process of self-making*

As described in Chapter 3, in the discourse of adaptive capacity a distinction is drawn, often implicitly but at times explicitly, between the process of building adaptive capacity and the step of taking adaptive action. Evident in this distinction is the theorisation by biologists and cyberneticians of the circular, self-perpetuating nature of living systems that is captured in the concept of *autopoiesis*, or ‘self-making’ (Hayles 1999). Developing the idea of the organisation of the living organism that featured in the modern biological conception of life when it emerged at the end of the eighteenth century, this process of self-making refers to the ‘circular self-reflexive dynamic’ whereby the organisation, or the functional interactive relations, of the living system reproduces itself (136). It is in this process of self-making that the emergent properties of the system such as resilience arise. The effects of this process – the physical form or structure that a living system may take at any given point in its lifecourse, for example – are held to be secondary to the process itself, however. In the replication of its organisation – which constitutes the continuity of its identity through structural change – the living system has no goal other than its own persistence or survival. This understanding of the process of the self-making of the living system appears in the systems theoretical discourse of adaptive capacity as the continuous process of building and maintaining the potential to adapt.

I argue that the centrality of this process of self-making in the discursive framework of the social-ecological system underpins the construction of adaptive capacity as both the means and the end of climate change adaptation. This can be seen in the way that maintaining adaptive capacity is held to be more important

than, and is prioritised at the expense of, the pursuit of any one potentially ineffective or maladaptive initiative – particularly as future climate change impacts are now expected to be less predictable and linear than previously anticipated. It underpins the governmental cultivation of adaptive capacity as a process that can occur in anticipation of and preparation for substantive adaptive action – which means, importantly, that it can also occur without the further step of actually doing anything adaptive. And in the case of Indigenous Australia, with the relations of the community on country understood to constitute Indigenous adaptive capacity, caring for country can be represented as an end in itself – irrespective of whether it might further the development goals valued in the contextual discourse of Indigenous adaptation, for example. This construction of the significance of the *process* of climate change adaptation has achieved resonance with Indigenous peoples’ own representations of caring for country as an expression of intertwined social, cultural, spiritual and ecological commitments to the maintenance of something that exceeds human interests, as discussed above.

I described in Chapters 3 and 4 how the discourse of adaptive capacity features a role for human agency as that which makes adaptive change possible. I argue that within the discursive framework of the social-ecological system, this agency is interpreted in terms of this distinction and is constructed in a way that rolls it into the reflexive dynamic of self-making that is fundamental to the very being of all living organisms. As I explore further in the following chapter, this agency can then appear in the discourse of adaptive capacity as that which, at a remove, accounts for adaptive action. The construction of adaptation in this discourse in terms of the ongoing process of building and maintaining adaptive capacity is the basis of a governmentality that fosters in its subjects a sense of agency to engage in the process of adaptation more than it governs the specific form or content of adaptive action – that is, the actual behaviours or practices with which the adaptive subject may respond to climate change impacts. This is part of a broader argument that I develop throughout the dissertation that the systems theoretical emphasis on *process* in the governmentality of adaptive capacity tends to sideline consideration of the specificity of both *content* and *context*.

With the content of any particular adaptive action considered to be of secondary concern to the self-perpetuating process of maintaining adaptive capacity, adaptive capacity in Indigenous communities is constructed as consisting not so much in discrete pieces of knowledge or particular practices on country as in the caring relations of country that underpin them. It is at times noted in the corpus of texts analysed that in a changing climate a practice such as gathering bushfood *could* prove valuable in the event of disruptions to the supply or affordability of produce in remote communities in the wet season or extreme weather, for example. But this function appears to be only peripheral to the value of this practice as an expression or manifestation of connection to country. In other words, what is adaptive in this case is not so much the practice of bushfood harvesting as the connection to country that drives it and makes it possible.

This means that a property like self-reliance, which is noted approvingly in discussions of the adaptation of indigenous communities as described above, is merely an *effect* of the relations of country – and the ethics implicit in them – that allow communities to get by without outside support. It is these underlying relations, which allow a community to be more or less self-reliant at any moment, that are considered more important in the discourse of adaptive capacity. This is an important point because the idea of resilience is often associated with self-sufficiency in ways that, as many commentators have pointed out, ties into neoliberal logics of responsibility. Although the idea of self-sufficiency remains widespread (and, as I describe in Chapter 7, is also associated with a specifically Indigenous discourse of self-determination), the discourse of adaptive capacity does *not* in fact demand of the adaptive subject a pure self-reliance. Rather, the discourse of adaptive capacity emphasises the agency that may engage in self-sufficient practices, but may equally choose to alternatively seek out assistance from sources beyond the local community, for example. In other words, in moving beyond the construction of the resilient community as exclusively self-reliant that is associated with the commonplace sense of resilience as the propensity to ‘bounce back’, the discourse of adaptive capacity does not preclude connections and exchange with other actors outside the local community. This framing is consistent with the important role of the enabling environment posited in the discourse of adaptive capacity that I discuss in Chapter 7.

Importantly, this construction of adaptive capacity grounded in the theory of the organisation of the living system also allows a construction of the fundamental identity of the Indigenous adaptive subject as something that would endure through structural change as the community alters its ways of life in a changing climate. This is particularly significant for indigenous peoples in Australia and elsewhere, for it is consistent with a strategic essentialist deployment of the discourse of indigeneity that positions it as an identity that can survive the various changes to which indigenous peoples have been subjected during and in the aftermath of colonisation. Through this construction, indigeneity is identified less with 'authentic' expressions of traditional culture – an association that has been the object of much critique, as I explore below – as much as with the connection to country that underlies them. In this way, an essential Indigenous identity is reconfigured through the lens of a systems ecological understanding of the organisation of the living system. The follow section considers the biopolitical implications of this construction of Australian Indigenous adaptive capacity.

#### *The politics of tradition*

Previous critical analysis of discourses of indigeneity has explored the effects of the 'repressive authenticity' inscribed in the terms of recognition in many settler-colonial contexts (Wolfe 1999: 168-190). This scholarship suggests that indigeneity can be a powerful political weapon to advance the goals of those who choose to identify as indigenous, but is also one that tends to backfire – revealing itself to be 'a double-edged sword' (Dove 2006: 194). It can place those who use it to pursue particular strategic ends, such as land rights and economic development, in a 'double bind' whereby the indigenous identification is necessary to achieve the end, but the achievement of the end threatens to undermine the indigenous identification (Cattelino 2010; Robins 2001; Povinelli 1999). Jessica Cattelino has shown, for example, that the way in which Native American communities have taken advantage of the legal loophole that allows them to establish casinos on their reservations has seen their indigeneity widely called into question where they are perceived to be not 'traditional' – including, especially, poor – enough to classify as indigenous (2010). As Elizabeth Povinelli has argued with respect to the requirements to demonstrate cultural continuity and authenticity in land rights claims in Australia, 'this inspection always already

constitutes indigenous persons as failures of indigeneity as such' (2002: 39). In this way the articulation of indigeneity is made possible 'at the very same time as [its] actual achievement [is rendered] impossible' (Dove 2006: 203). This is an effect of the definition of indigeneity in cultural terms discussed in the previous chapter – terms which constitute criteria that indigenous peoples can fail to satisfy (Deloria 2002).

In the case of Aboriginal and Torres Strait Islander communities, the promise of the opportunities afforded by caring for country initiatives requires of these communities that they strive to live up to a connection to country perceived to be intrinsic to the identity that is the basis of their claim to be on country. This requires them, like other indigenous peoples around the world, to 'embrace their role as caretakers' (Lindroth and Sinevaara-Niskanen 2016: 138), demonstrating an ethic of environmental sustainability not expected of other groups. As Tatour has argued with respect to the Bedouin people, as long as indigenous claims to land are 'culturalised' rather than politicised, indigenous peoples risk 'compromising their long-term claims to land by conditioning them upon the perpetual practice of an imagined "authentic" culture' (Tatour 2019: 2).

This 'double-edged sword' of the articulation of indigenous identity in claims to land and other rights is typically considered to require of indigenous peoples an adherence to the unchanging and primordial cultural traditions taken to represent this 'imagined "authentic" culture', as has indeed been the case in the process of securing native title and land rights in Australia. In the context of initiatives to respond to climate change, Andrew Baldwin has argued, for example, that a discourse that holds that carbon management schemes in the Canadian boreal forest are consistent with traditional aboriginal land use 'commits a form of epistemic violence by foreclosing the radical heterogeneity that works beneath the universalizing category of aboriginality' (2009: 233). In other words, it maintains and requires that all aboriginal people live traditional lifestyles of peaceful forest stewardship. Access to roles in caring for country in Australia in the context of climate change adaptation appears to be similarly conditional on the demonstration of a cultural connection to country and authentic Indigeneity.

I argue that in the discourse of Indigenous adaptive capacity the significance of tradition is slightly different, however. As shown above, in order to be considered authentically indigenous, indigenous peoples must demonstrate not any particular pre-modern, traditional knowledges and practices, but a connection to country from which is derived an adaptive capacity. Indeed, as I argue in the following chapter, far from the requirements of traditional stasis observed by Baldwin and others, the discourse of indigenous adaptive capacity demands of indigenous peoples an ability to undergo and survive change. Thus authentic or 'legitimate' indigeneity remains narrowly, but differently, defined. Importantly, this way of conceiving of adaptive capacity means that it can be attributed to indigenous peoples regardless of rights and access to land, and moreover that adaptation through caring for country is possible *even in the absence* of 'direct control over country'. This is evident in the following excerpt: 'Increasing the links between Indigenous people and their country was an important way to increase adaptive capacity and a pathway for adaptation strategies to be developed. This was an important feature of climate change adaptation processes *irrespective of the degree to which Indigenous people had direct control over country*' (C59/Low Choy et al. 2013: 48; emphasis added).

The way that the connection to country is constructed as inalienable, enduring independently of any particular elements of traditional culture or a physical presence on country, has important – and mixed – political implications. It is both a powerful articulation of identity that, as I described above, has been used by indigenous peoples to resist a discourse of authenticity that holds that removal necessarily means a loss of connection to country. On the other hand, this discourse threatens to erase and depoliticise the dispossession that in many cases has undermined connection to country. The link between dispossession and vulnerability is obscured and downplayed by the idea that adaptive capacity can survive dispossession effectively intact even if particular traditional knowledges and practices have not.

This has the effect of weakening the grounds to make the case that because dispossession has cut people off from their lands and traditions and thereby left them vulnerable, redress in the form of 'the recognition of collective rights to land as a basis for efficient adaptation measures' (C34/NAILSMA 2010: 24) and

material assistance to face the challenges of climate change is required. This is an analysis that is possible only on a reading of the political and historical context of vulnerability offered by the contextual vulnerability discourse. In the discourse of adaptive capacity, which turns 'from the world outside to indigeneity as subjectivity' (Lindroth and Sinevaara-Niskanen 2016: 138), these material considerations are discounted as disempowering. With indigenous adaptive capacity considered inalienable, and adaptation therefore considered possible 'irrespective of the degree to which Indigenous people ha[ve] direct control over country' (C59/Low Choy et al. 2013: 48), it would therefore seem that, although it centres around connection to country, the discourse of an inherently indigenous adaptive capacity could in fact result in a paradoxical disconnection from country in any grounded, physical sense. In other words, the mobilisation of this discourse of adaptive capacity, which constructs it as inhering in the relations of country, could in fact undermine the very sorts of material claims to country that Indigenous peoples seek to make.

## **5.5 Conclusion**

I have argued in this chapter that Indigenous adaptive capacity is constructed as a property of the community on country, which is understood in this discourse as a social-ecological system. This capacity to undertake adaptive change is realised through the reciprocal relations of care that bind together the human and non-human members of this collective and ensure their survival through environmental pressures. It has, I argue in this dissertation, become the object and handle of a governmentality that cultivates these relations for their adaptive potential. By appealing to a sense of Indigenous connection to country that can survive colonial dispossession and removal, this discourse constructs this property as an inherent, essential part of Aboriginal and Torres Strait Islander identity. With adaptive potential consisting in these relational dynamics within the social-ecological system, caring for country figures in the biopolitics of Indigenous adaptive capacity as an end in itself. I argue that caring for country is interpreted and represented here in the terms of the functional interaction of living organism as an interconnected and self-sustaining whole, as it was newly conceived, according to Foucault, with modern biology. This conception of the living organism, which understands its inherent capacity to sustain itself to consist in a

process of internal organisation, has ultimately informed, I argue, a distinction drawn in the adaptive capacity literature between building adaptive capacity and taking adaptive action, or between the process of adaptation and its substantive content or effects. This distinction forms the basis of a key element of the discourse of adaptive capacity: the construction of an agency to engage in the process of adaptation. I examine the significance of this agency in the following chapter.

Thus consisting in these internal dynamics of the community on country, Indigenous adaptive capacity is constructed in this discourse as associated not with a fidelity to cultural traditions that might once have proven adaptive, but rather, and at a more fundamental level, with the identification with country that maintains these relational dynamics. In moving beyond the trope of traditional Indigenous culture, and promising recognition and opportunities to engage in caring for country, this identification of Indigeneity with a capacity to undertake adaptive change holds a powerful appeal. I argue, however, that this discourse effectively redefines essential Indigenous identity. Crucially, with the focus of this biopolitics on the dimensions of adaptation internal to the social-ecological system, considerations of its contextual and material dimensions are obscured. The construction of an Indigenous adaptive capacity that consists in an inalienable connection to country has the potential, I suggest, to undermine the claim that adaptive capacity has been diminished by the legacy of colonial dispossession. It therefore could diminish the grounds on which Aboriginal and Torres Strait Islander peoples might make the case that effective climate change adaptation depends on rights and access to land, as well as the resources to care for it.



## **Chapter 6: An agency for transformative change**

In the attribution of an inherent adaptive capacity to Indigenous peoples that I described in the previous chapter, the capacity to adapt is constructed as residing not in any particular knowledges, practices and values, but in the connection to country from which these are derived. Here I develop the argument that this adaptive capacity is equated with an agency to navigate the 'ongoing change process' of climate change adaptation (Berger et al. 2014) and, in particular, the active engagement in a 'transformative' approach to adaptation that is now seen to be required to meet the challenges of unprecedented and non-linear climate change. This engagement with the task of transformative adaptation figures in the research literature and in texts about Australian Indigenous adaptation as a process of actively and strategically learning and adopting the new knowledges, practices and values required. With this a kind of engagement with the changing world that Indigenous peoples are now recognised to be uniquely proficient in, the adaptive Indigenous subject is governed through the discourse of adaptive capacity to similarly undertake climate change adaptation as a process of navigating tradition and novelty.

I argue in this chapter that although the political rationality of the discourse of adaptive capacity prescribes a role for the subject to engage in adaptation in ways considered possible only on the basis of a human agency, the possibilities for transformative change are constrained by the foundations of this discourse in evolutionary biology. This reflects the ambivalence about what drives change in the coupled social-ecological system that is, I argue, a function of the pragmatic holism that has seen the integration of biological and social perspectives within a systems ecological framework. This tension is evident in the construction of Indigenous adaptation in the texts analysed, where the active engagement of the adaptive subject is constructed as vital for learning, effectively explaining how the

social-ecological system can achieve a new and more adapted state from out of the old. However, the discourse of adaptive capacity offers an account of adaptation as an ongoing, circular process analogous to the functioning of the living system. Here adaptive capacity constitutes not only the means of adaptation, but also its end, with the effect that the process of adaptation can amount to little more than ongoing learning and investing in further adaptive capacity.

In the first section I explain how the discourse of transformative adaptation evokes an agency to engage in the task of navigating adaptation options, an agency that is theorised in the discourse of the social-ecological system as a product of human evolution. The second section examines the attribution to Australian Indigenous peoples of a unique capacity to navigate change in the ways now seen to be required in the face of climate change. The third section describes how this process of navigating change appears in the discourse of Indigenous adaptive capacity as one of learning that occurs largely in lieu of substantive adaptive action. Extending the argument in Chapter 5 that the discourse of adaptive capacity disconnects the process of adaptation from its context, I show that construction of the ongoing process of investing in the adaptive Indigenous subject has become detached from the material reasons and objectives that motivate transformative adaptation in the first instance. However, also evident in this discourse – and at odds with this systems ecological construction of adaptation as autonomous and self-perpetuating – is the theorisation of an ‘enabling environment’ that might provide the means required for communities to work towards adaptation. This represents a political rationality that explicitly acknowledges a need, and establishes a role, for government in facilitating adaptation – but, as I show in the final section and explore further in the following chapter, the support offered by government is limited to cultivating the existing adaptive capacity of the Indigenous subject.

### **6.1 Transformative adaptation**

The discourse of transformative adaptation calls for radical adaptive change and places in the foreground the role of the adaptive subject, rather than environmental forces, in shaping this change. The construction of the role of

human agency in this account of adaptation represents, I argue, a departure from Darwinian evolutionary theory and early theories of human adaptation in cultural ecology and ecological anthropology. This discourse differs from those accounts, which effectively held that adaptation ‘was happening behind the backs of actors through cultural thermostats’ (Watts 2015: 31), by making possible human intentionality and choice in the process of adaptation. In this section I describe the constructions of the possibility of transformative change, the role of the adaptive agent in achieving it, and the process of learning through which it does so, all of which are key elements of the governmentality of adaptive capacity.

### *The nature of change*

At its core the concept of adaptation, as it emerged from evolutionary biology, has been understood as the process whereby changes in the environment lead to changes in the organism. It is a process of ‘tracking’, in order to be able to ‘keep up’ with, ‘a moving, worsening environment’ (Levins and Lewontin 1985: 23). Adaptation thus accounts for the difference between the old and the new states of a living system. As introduced in Chapter 3, the new theories of non-equilibrium ecology offered an appreciation that environments inevitably change, and do so incessantly and typically in more rapid and unpredictable ways than had previously appeared in the picture of incremental, gradual change over the *longue durée* of evolutionary history. This has directed more attention to adaptation as an ongoing, contingent, potentially tumultuous *process*, rather than the achievement of a *state* of adaptedness (Kelly 1995). Where, in an evolutionary perspective, ‘the evolution of organisms is simply keeping up with the [...] environment, but *nothing is happening globally*’ (Levins and Lewontin 1985: 23; emphasis added), in contrast an understanding of adaptation as contingent loosens this static coupling of organism and environment, and opens up more diverse and divergent paths of change that each might take.

This latter understanding of adaptation is coming ever more to the fore with growing concern that climate change would appear to be occurring at greater rates and scales, and in more non-linear ways, than previous climate modelling had projected (Schneider 2004; Rockström et al. 2009). As was described in Chapter 3, the prospect of these potentially dramatic transformations in the Earth

system is increasingly met with calls for equally radical transformation in social systems. With adaptation no longer viewed as 'a linear, largely self-limiting trajectory that favours readily identifiable and discrete adaptation actions' (Tschakert and Dietrich 2010: 12), the active selection of adaptation actions is placed at the centre of the task of adaptation. *Choice* is seen to be inevitable in the process in the sense that options do not necessarily readily present themselves. Accordingly, Australia's National Strategy for Disaster Resilience seeks to cultivate communities 'able to exercise choice on how to deal with [...] local hazards and risks' (C38/COAG 2011: 10) for example. This is a vision of adaptation very different to the evolutionary picture mentioned above, in which 'nothing is happening globally' (Levins and Lewontin 1985: 23).

The possibility that adaptation could prove maladaptive implies that it is possible to make a poor choice from among multiple available options. And to avoid actively making a choice – to engage in the incremental, reactive, autonomous adaptation of the organism 'keeping up' with its environment for example – could prove the worst choice of all, it is argued. Because 'short-term adaptation can result in long-term maladaptation' (Brooks et al. 2009: 741), 'adaptation activities that result in gradual changes in livelihood strategies may therefore be maladaptive' (Dodman and Mitlin 2013: 649). The discourse of transformation positions change as the opportunity for not only a narrow, immediate range of responses to environmental conditions but all manner of changes that might improve or develop the adaptive subject. This is adaptation that 'goes beyond reducing vulnerability and preparing for hazards, and involves an *ongoing change process* where communities can make decisions about their lives and livelihoods in a changing climate' (Berger et al. 2014: 22; emphasis added).

I argue that the discourse of adaptive capacity emerged to account for and make possible this active selection of adaptation options. In constructing the capacity to adapt as 'the ability to change one's state, or condition' (Colombi and Smith 2012: 13), it invokes, implicitly and explicitly, a human agency that can make such change happen – and, indeed on which the possibility of transformative change depends. This agency is the object of a governmentality that fosters an active engagement on the part of the adaptive subject to undertake transformative adaptive change – appealing explicitly, in this case, to the *freedom* of the subject

that Foucault argued is essential to the operation of government as distinct from coercion or force. How such a construction of human agency has emerged in the discursive framework of the social-ecological system is discussed in the following section.

### *Revitalising the system*

The discourse of transformative adaptation, and the role of human agency in bringing it about, together represent a fundamental shift in thinking about adaptive change from the view which was derived from Darwinian evolutionary theory and which had initially informed the development of the concept of the living system. The theory of natural selection offered, as described in the introductory chapter, a mechanistic, non-teleological causal explanation for adaptive function. This is one that successfully accounts for how an adaptive feature of an organism or society can be said to exist *prior* to the adaptive function that it achieves. This is important, because to say that an adaptive feature emerged *in order* to achieve a certain adaptive end would be to posit a cause – the adaptive function or end – that occurs *later* in time than its effect – the adaptive feature – which is considered a physical and logical impossibility (Little 1991). The causal mechanism of natural selection gets around this problem because the adaptive features in which it is interested are the random variations that already exist among individuals of a species and which are then selected by environmental conditions.

Early thinking about adaptation in human systems was derived from this Darwinian tradition of evolutionary biology and employed these same principles. The functionalist accounts of human adaptation by mid-twentieth century cultural ecologists and ecological anthropologists, as well as the hazards school in geography, essentially held that natural selection acts on cultural variations in the same way that it does biological ones (Watts 1983a; Orlove 1980). In this view, ‘a group which does not have adequate methods of coping with environmental stress will not be able to compete for scarce resources and will fail to continue’ (Smit and Wandel 2006: 283). Critics pointed out that this approach lacks any account of how and why some cultural practices and not others are taken up in human societies in the first instance, and in many cases are observed to persist

irrespective of their efficacy for the objective of survival (Little 1991; Watts 2015). It tends to simply 'presuppose an excessively optimistic metatheory, holding that societies will tend to evolve toward more functional characteristics' (Little 1991: 102). In the absence of any such theoretical foundations, functional explanation applied to social phenomena remains 'inherently incomplete' (102). As the cultural anthropologist Marshall Sahlins argued, these models 'exchange [...] meaningful content for functional content' (1972, cited in Watts 2015). An account of human adaptation begins to acquire more meaning and explanatory power as soon as it admits a role for intentional action on the part of social actors, of course, for it can show that adaptive practices are adopted *in order to* achieve certain ends and is thus another way around the logical problem of functional explanation (Little 1991).

Since the early conceptions of mid-century systems ecology, the theory of the living system has been influenced by considerable developments in thermodynamics and cybernetics in ways that explain how novelty can emerge. These have shown how adaptive change can occur not through the gradual operation of natural selection on random variations over multiple generations, but through active transformation that the living system undergoes within its lifetime. This shift was made possible by the idea in non-equilibrium thermodynamics that life creates order from disorder through what are termed 'dissipative structures', which hasten the dissipation of energy and establish an 'arrow' or flow of time that leads to multiple possible and contingent forms that life can order itself into (Prigogine and Stengers 1984). The 'new' ecology of the 1980s and 1990s, abandoning its mid-century assumptions of stability, turned to the study of non-equilibrium dynamics and questions of directionality and history. It employs the 'third wave' cybernetic understanding of the self-organisation of the living system 'not merely as the (re)production of internal organisation but as the springboard to emergence' (Hayles 1999: 11) and 'into the new' (222). Seeking to 'portray systems not as deterministic, predictable and mechanistic but as process-dependent organic ones' (Folke 2006: 257), this iteration of systems theory takes the system to be 'fast, responsive, flexible' and 'capable of constantly reinventing itself' (Hayles 1999: 158). This is the discourse of the *complex adaptive system* that is central to current thinking about climate change

adaptation.

The theory of the complex adaptive system makes a place too for human agency, for it is argued that this theory must go beyond seeing the function of ecological, economic and social systems '*as being similar* to biological processes', as proposed by early cybernetic theory. That, Holling et al. claim, is a merely 'partial' representation, and they advocate instead a 'worldview that integrates ecological with economic with institutional with evolutionary theory' (2002a: 10). Others have similarly argued that 'evolutionary biology sits as a master or metatheoretical basis which frames adaptive capacity' (Fennell and Plummer 2010: 247) and into which a 'socio-cultural' reading of change can be integrated. This 'socio-cultural' reading includes the human capacity for 'agency-driven' adaptation demonstrated when, 'unlike natural systems, actors within human systems strategize and take action in response to aspirations and perceived opportunities' (Moench 2009). Within this evolutionary metatheory, agency is attributed to human consciousness, which is a product of advanced human evolution (Moench 2009) that itself accelerates 'cultural evolution' (Abel and Stepp 2003; Callicott 2007).

Thus, when they are understood to encompass humans, such as in the case of the social-ecological system, complex adaptive systems achieve adaptation through the mobilisation of agency. It is with this agency that human systems can engage with the challenges of changing environmental conditions, generating the adaptive changes that ensure not only their survival but their evolutionary development towards greater complexity. Adaptive social systems are theorised as being populated with 'interacting, thoughtful (but perhaps not brilliant) agents' (Miller and Page 2007: 3) that, by 'processing and deploying information, and engaged in complex interaction, lead to emergent phenomena' (Watts 2015: 37). These thoughtful agents process and deploy information to adaptive ends through 'an autonomous selection process' (Folke 2006: 257) which is represented in the discourse of adaptive capacity as one of 'agency-driven innovation' and learning, as I explain further in the following section. It is by engaging in such innovation that human agency is seen to be capable of achieving forms of transformative change not possible through the myopic and gradual process of evolution by natural selection.

Such ‘agency-driven innovation’ is seen by theorists to operate in addition to, and in a different way to, the selective pressures that are at work in Darwin’s variational theory of evolution. The idea that humans can purposefully undertake the changes that make them better adapted to environmental conditions is more akin to the ‘transformational’ conceptions of evolution, such as the vitalist interpretation of Lamarck, that Darwin dismissed with his ‘variational’ theory (Levins and Lewontin 1985). Appearing to break with the determinism implied in the image of a species buffeted about by selective forces that may have the effect of allowing it to ‘keep up’ with its changing environment, this conception permits organisms the possibility to choose to diverge from their previous trajectory and to pursue a radically contingent adaptation pathway among many others – precisely as the discourse of transformative adaptation now does. Based on the recognition that human adaptation is not the ‘natural random work’ of natural selection (Ribot 2014: 696), human consciousness and agency is thus seen to allow people to go about adaptation much as Lamarck’s giraffes did when, acting on a ‘vital urge’, they purposefully lengthened their necks in order to access more food in the upper branches of trees (Levins and Lewontin 1985). In this view humans are, in other words, the *subjects* rather than the *objects* of the selection process through which adaptation occurs (Levins and Lewontin 1985: 69) – able to alter not only themselves but also their environments and thus any external selective pressures at play.

The theory of the social-ecological system therefore represents a meeting point of two once fundamentally conflicting perspectives on how living beings undergo change. Through the integration of a construction of human agency and the kinds of contingent transformation that it makes possible into the evolutionary biological ‘metatheory’, the adaptive capacity discourse appears to achieve the ‘reconciliation of actor- and system-oriented approaches’ (Nelson et al. 2007: 399) that it seeks, as described in Chapter 3. I argue that in deferring to a human agency to explain change in social systems, the theory of the system can be seen to represent once again – as it did with the conception of the ecological system – an attempt to reconcile a ‘vital’ impulse within a systems account that is mechanical in its origins. It would seem to overcome the limitations of the early application of systems models to human adaptation by ecologists and



anthropologists described above by offering social explanation of why and how people undertake adaptive measures. As I describe in this chapter, the capacity of the adaptive agent to actively anticipate and prepare for the impacts of climate change figures as a key part of how adaptation is understood to occur. I show in this chapter that this reconciliation is a problematic one, however, and that the discourse of adaptive capacity, lacking an adequate account of how social change occurs, tends to appeal interchangeably to evolutionary principles and to social theory in ways that are not always consistent. This has the effect of ultimately limiting the kinds of social, political and economic change that is considered possible for the Indigenous subjects in the context of climate change.

#### *Agency-driven innovation*

In the discourse of adaptive capacity, the exercise of a human agency to engage in the task of adaptation is constructed as a process of learning. The construction of human agency that now features in the theory of the social-ecological system, as I described above, is crucial in this discourse because, as the driver or impulse behind change, it 'suggests that social actors can exercise foresight, learn and shape change' (Fennell and Plummer 2010). In facing environmental challenges, as humans 'our greatest advantage is that we can analyse [...] patterns and learn from them' (Scheffer and Westley 2007: 36). In the literature on climate change adaptation it is argued that agency and consciousness allow human communities to strategically draw upon past experience, avoid the mistakes of the past, and effect radical transformations where incremental change would not suffice (Dodman and Mitlin 2013). Learning is, in other words, considered to be at the core of, and the key to, human adaptation. It therefore figures as an important mechanism of the governmentality of adaptive capacity in its engagement of the adaptive subject in transformative change.

This potential for learning is constructed in the discourse of adaptive capacity as what allows actors to find their way towards the new and away from the old, typically preceding and making possible any material adaptive action. Theorised as one of the three pillars of resilience, as I described in Chapter 3, 'social learning' is considered to be key to the potential for the transformative change in the social-ecological system. As the process that produces or leads to the

adoption of new 'values, beliefs and behavioural norms' (Pelling 2011: 59), learning enables any existing knowledges or practices to be altered or adapted to changing circumstances as needed. Australia's National Strategy for Disaster Resilience notes that 'new choices are made and learning occurs' in a process of active reflection following a disaster, for example (C38/COAG 2002: 12). Learning thus implies a meeting – and often a mixing – of the old and the new, involving at its heart 'a tension between dominant and alternative or novel ways of seeing and being' (Pelling 2011: 59). This ability to learn through the strategic negotiation of the old and the new is seen to constitute an important element of the capacity to adapt.

Learning from human history appears in this discourse as an important aspect of ensuring adaptation into the future. In the study of social-ecological systems, it is argued that 'the tendency to continue to practice habits that lead to success or coping in past times, has contributed to societal demise in times that demanded change and flexibility' (Fennell and Plummer 2010: 254). In this discourse, human history is considered to be peppered with examples of failure to adapt to changing conditions. This representation reflects a recent resurgence in the popularity of stories of the folly of collapsed civilisations found in the work of Jared Diamond, for example (Diamond 2005; Janssen et al. 2003; Fazey et al. 2007) – a trend regarded with concern by critical geographers who have long raised concern about the environmental determinism implicit in such accounts (Radcliffe et al. 2010). In the context of the warning in the climate change adaptation literature that 'if the present society fails to learn the lessons from the past, they may suffer the same fate' (McBean and Rodgers 2010: 872), the long histories of survival of indigenous peoples around the world are seen to offer particularly valuable examples of both success and failure (Colombi and Smith 2012).

What is most important to draw from the past, in this discourse, is not any particular environmental knowledge or practices that may prove inappropriate in changing conditions, but rather the skills to learn and an attitude of openness and flexibility. Here 'memory' of the past, or 'experiential grounding', 'serves as the knowledge base underlying the capacity for anticipating [...] future uncertainty and surprise' (Tschakert and Dietrich 2010: 20). In the 'ongoing change process' of

adaptation, 'learning itself is considered a kind of adaptive behaviour' (Pelling et al. 2008: 870). Therefore, '*developing the ability to learn flexibly* [...] is an important element of developing adaptive capacity' (Fazey et al. 2007: 375; emphasis added). In other words, this is a skill that must be cultivated in the adaptive subject and the task of building adaptive capacity consists, in large part, in *learning to learn*. Developing this capacity to learn involves targeting 'the attributes of individuals, organizations, and institutions that might foster learning in the context of change and uncertainty, such as a willingness to learn from mistakes, engage in collaborative decision-making arrangements, and encourage institutional diversity' (Armitage 2005: 707). I explore how this ability to learn features in the governmentality of adaptive capacity, including the role of government to invest in it, in more detail in the third section of this chapter.

Learning is constructed in the discursive framework of the social-ecological system, where it features prominently in the paradigms of adaptive management and adaptive governance, not only as an individual undertaking, but also as a collective, social process, mediated by formal and informal practices and institutions of reflection and deliberation. Here 'social memory' refers to 'the arena in which captured experience with change and successful adaptations, embedded in a deeper level of values, is actualized through community debate and decision-making processes into appropriate strategies for dealing with ongoing changes' (Berkes et al. 2003: 21). It is argued that 'more robust adaptive strategies are likely in communities that can draw upon social memory to deal with uncertainty and change' (Fennell and Plummer 2010: 255). Indigenous peoples around the world are represented in the academic literatures on the social-ecological system as having demonstrated a strong capacity for social learning (Berkes 2018).

As I have argued in this section, learning is seen to be the key to the process of purposive and transformative change that constitutes human adaptation in the discourse of adaptive capacity, a type of change possible only on the basis of the inclusion of a concept of human agency in the discursive framework of the social-ecological system. I argue that the governmentality of adaptive capacity operates on and through the agency to purposively select a course of adaptation. The following section explores how Australian Indigenous peoples' experience of

navigating an adaptive path through environmental change is represented in the discourse of adaptive capacity.

## **6.2 An Indigenous capacity for change**

The adaptive Indigenous subject is constructed as being particularly adept at the ‘agency-driven innovation’ and learning described above. As I argued in the previous chapter, Indigenous adaptive capacity is not taken to consist in fixed and unchanging knowledges or practices. Instead, as I explain here, it is taken to consist in a *capacity to learn* demonstrated when Indigenous peoples ‘have also adapted and adopted new technologies as they became available’ (C71/Dhimurru 2015: 38). This ability to learn is represented as being a product of a long history of adapting to environmental change – as well as more recent colonial history – through which Indigenous peoples ‘have learned to cope with extreme weather events in the past, and they have endured and adapted to devastating social changes’ (C53/Bird et al. 2013: 206). What is valued in the discourse of indigenous adaptive capacity, in other words, is the capacity to adapt by engaging with and negotiating the means at hand – new and old knowledges, practices and experiences, and it is this capacity which is cultivated in the governmentality of adaptive capacity.

### *The hybridity of old and new*

As I discussed in Chapter 4, constructions of an Indigenous history of adaptation to environmental change are part of an important challenge to previous representations of Australian and other indigenous peoples as ‘timeless’, or lacking a history altogether. Through revisions to the discourse of indigeneity in recent decades, anthropology has moved beyond its earlier focus on ‘bounded entities and fixed authenticities’ to recognise indigenous peoples as ‘culture makers’ (Warren 1998: 27). Change has come to be seen as inherent to indigeneity in the sense that indigeneity necessarily represents survival and adaptation into the present (Lindroth and Sinevaara-Niskanen 2014). Indigenous histories of change, and the capacity for change that they evidence, have increasingly been read in positive and optimistic terms in context of climate change and in the discourse of adaptive capacity in particular. For example, Nigel Clark has argued that on the basis of their ‘cosmopolitanism’, Aboriginal people

can be seen as 'nomads' in the sense of Deleuze and Guattari, having demonstrated a capacity to move through 'the variability of earth processes' (as well as, more recently, colonisation) (2008: 740). He describes this capacity as 'a feeling for how things change, when systems are approaching thresholds, and when the time is right to tap in or intervene' (740).

With change now recognised as part of indigenous pre- and post-colonial histories, the discourse of indigeneity now tends to encompass the binaries of 'innovation and loss', 'old and new', and so on (Sinevaara-Niskanen 2015: 154). A core contribution of Australian critical Indigenous studies has been to show that hybridity – of Indigenous and non-Indigenous ancestry, appearance, language, occupation and many other dimensions of personal identity and experience – is a reality of modern Indigenous life in Australia and other settler states (Merlan 1998; Paradies 2006). This is marked by an insistence that Indigenous peoples have the right and the capacity to choose between and to actively navigate the elements of their Indigenous heritage and settler Australian society. Anthropologists have argued that 'it is now possible to see that the tide which swept us all into a condition of modernity and into ever more global processes is not a tide which Indigenous people want to avoid at all costs, even were that possible' (Lea, Kowal and Cowlshaw 2006: 3).

A pragmatic interest in survival is one current underlying this approach to continuity and change that is apparent in the academic literature as well as the corpus of texts analysed in this study. There is a need on the one hand to 'rebuild the stuff that was knocked over and kicked around and roughed in the invasion process' but on the other to 'pick up on the modern world and pick up all those skills and technology stuff that we need' (Warren Mundine, in interview with Sarah Maddison, Maddison 2009: 78). Indeed, arguably 'the maintenance of customary ways as they exist today relies on remote Aboriginal people grasping a secure position for themselves within the state and its economy' (Austin-Broos 2011: 21) – modern means are required, in other words, to maintain tradition. 'That's why you see a lot of people driving around in Toyotas in the Central Desert and Aboriginal people who are flying in aeroplanes and that now. What you've got to do is use those tools for your own benefit [...] reject some things and keep some things [...] *As things change in the world, then you change*' (Warren

Mundine, in interview with Sarah Maddison, Maddison 2009: 78, emphasis added).

These ideas about hybridity and changing oneself as ‘things change in the world’ play an important part in the discourse of Indigenous adaptive capacity. One report in the corpus notes that, for example, ‘a thread running through these broader aspirations regarding Ngadju culture, livelihoods and country is a recognition of the need to move with the times, and *meld the best of the old with the new*’ (C65/Prober et al. 2013: 43; emphasis added). This means that reliance on a repository of traditional knowledges and practices in the process of adapting to climate change is at best only part of the picture. This reflects how, in the governmentality of adaptation through caring for country discussed in the previous chapter, any particular practices of caring for country are no longer seen to be essential to connection to country.

The knowledges and practices that are seen to be required for caring for country in this changing context therefore include elements of both traditional and Western styles of management. A document about land management in Kowanyama in the Gulf Country of Queensland sets out the need to bring together the traditional and the modern as follows:

‘The vision is one of management of country in modern and changing times for the benefit of future generations. It is a situation in which people cannot return to the past but rather choose to bring the past into the present. New management technologies are added to old’ (C23/Kowanyama 2008: 10).

For the Northern Territory Dhimurru rangers this imperative to ‘combine’ the old and the new reflects ‘the importance of both Yolŋu and mainstream intellectual traditions to our work. Knowledge and skills from the Yolŋu world must be combined with those from mainstream environmental resource management practice in the work of Yolŋu Rangers’ (C21/Dhimurru 2008: 30).

A reading of indigenous cultural change from this perspective can even interpret the construction of indigenous identity itself as an adaptation to the demands of a changing world. In the social-ecological systems literature the Grand Ronde

people of the west coast of the USA, for example, have been described as having ‘adapted their ideology and identity out of many different linguistic and cultural heritages to become the Grande Ronde’ (Colombi and Smith 2012: 13). This identity is seen to have provided the basis for them to ‘adapt their sovereign power’ by ‘getting returned lands, and transforming to a new and more tribally controlled economic portfolio’, thereby ‘adapting their values and knowledge to new situations’ and ‘turning dynamic change into tribal opportunity’. My analysis indicates that the agency to bring together the old and the new in the ways outlined here is an important part of the construction of adaptive Indigenous subject.

#### *Adapting traditions in a changing climate*

In the discourse of adaptive capacity, adaptation involves the strategic and selective application of traditional knowledge in a contemporary and changing context. In the corpus of texts analysed it is widely argued that the effectiveness of climate change response in Australian Indigenous communities ‘will be determined by *the capacity to use local knowledge of conditions and to adapt traditions to changing circumstances*’ (C58/Leonard et al. 2013: 60; emphasis added). A strategic and selective approach is considered to be essential on the grounds that climate change is ushering in weather and other environmental phenomena that are historically unprecedented and less predictable (C28/Green et al. 2009), as introduced in Chapter 4. This is seen to call into question the utility of existing knowledges and practices by ‘making some traditional forecast indicators’, for example, ‘less reliable’ (C05/IDCC n.d.: n.p.). It is suggested that, ‘given their reliance on close associations between two or more unrelated environmental events, [these indicators] are likely to be easily uncoupled’ (C36/O’Connor and Prober 2010: 3). As a result, texts in the corpus report that ‘Aboriginal people are increasingly uncertain about the weather’ (C60/Memmott et al. 2013: 4).

The texts in the corpus and the academic literature observe that indigenous peoples around the world are already responding to this uncertainty by altering the way that they go about various activities. This may involve letting go of traditions in the pragmatic approach of ‘reject[ing] some things and keep[ing] some things’, in the words of Warren Mundine, that underpins the discourse of

hybridity I described above. Memmott et al. report that in the Upper Georgina River Basin region ‘some people are hunting when the conditions are likely to be most productive rather than following the previous practice of seasonally based activities’ (C60/Memmott et al. 2013: 4). In the systems ecological literature it has similarly been observed that in the western Canadian Arctic, indigenous communities are ‘changing when, where and how hunting and fishing occur’ to cope with increased seasonal variability, including warmer temperatures and unpredictable sea ice conditions (Berkes and Jolly 2001: 18).

Traditional knowledge is therefore not to be applied rigidly, but rather appears in the discourse of adaptive capacity as the basis for a capacity to learn into the future. In the academic literature it is argued that ‘community adaptive capacity to deal with change relies not only on existing cultural adaptations but also on the ability to put together knowledge from different sources to make a new synthesis, co-producing knowledge’ (Berkes and Ross 2013: 9). This idea appears in the corpus in the claim that in Australian Indigenous communities ‘the use of TEK [traditional ecological knowledge] [...] strengthens their social and cultural knowledge and practices by applying them in modern land and environmental management regimes’ (C58/Leonard et al. 2013: 60). In this way indigenous peoples ‘*build on* their traditional resilience’ (Berkes and Ross 2013: 9; emphasis added).

The importance of engaging with new ideas and ways of doing things in addition to tradition is evident in the contrast drawn in representations of older and younger members of Indigenous communities in the corpus. Although younger people are considered to be in danger of losing connection to traditional culture for a variety of reasons, they are also seen as particularly capable of making sense of climate change due to a greater literacy in settler Australian spheres as well as a greater flexibility of attitudes and perspectives.

‘Although some youth may have lost touch with their culture they were, in general, considered more adaptable than older generations, as *they can access new technologies and methods*. Moreover, they are more likely to appreciate the issues involved in climate change when they are exposed to relevant and



appropriate education. Thus, changing the attitudes of youth is likely to be easier than that of adults and is another area where resilience can be enhanced' (C53/Bird et al. 2013: 206; emphasis added).

A great deal of hope is therefore invested in the potential for young people to build on the existing adaptive capacity of Aboriginal and Torres Strait Islander communities. Discounted in this picture of resilience are the elements of traditional knowledge and practice that Indigenous peoples would wish to see passed on, however, but which are difficult to sustain amidst the pressures of contemporary Australian life. As I argue below, questions of the resources required to pass on culture from one generation to another – through such initiatives as were mentioned in Ch 4, including cultural camps and ranger programmes that train young people on country – are complicated by the construction of the inherent capacity of the adaptive Indigenous subject as a collective to strategically adapt its traditions to a changing world.

The capacity to negotiate change seen to be demonstrated by Indigenous peoples in the ways outlined in this section are an important dimension of the construction of Indigenous adaptive capacity. In the following section I discuss the ways in which building adaptive capacity figures in this discourse of adaptation as a process of learning, and describe in more detail how Indigenous engagement in this process is constructed in the texts analysed.

### **6.3 A learning orientation**

This section examines how the adaptive Indigenous subject is governed to actively and strategically engage in a process of adaptive learning. This involves the cultivation of 'the ability to learn flexibly' theorised in the discursive framework of the social-ecological system – a flexibility which is seen to be especially crucial in light of the uncertainty and indeterminacy of knowledge about non-linear climate change impacts. This capacity for learning is seen to depend on, first, an awareness of the need to adapt, and then an open, flexible and pragmatic orientation to the task of negotiating the different forms of knowledge and practices required for adaptation. This orientation is seen to already be demonstrated by Indigenous peoples in the responsiveness and flexibility that

characterises the ethic of caring country. In the governmentality of adaptive capacity, the adaptive Indigenous subject is required to extend this existing capacity by further developing the ability to learn – with the possibility, I argue, for adaptation to ultimately amount to little more than reflexive engagement in the process of building adaptive capacity.

In the discourse of adaptive capacity, a fundamental condition for effective adaptation is considered to be *awareness* of the challenges posed by climate change and of the options available to adapt. This is reiterated widely in the academic literature, where information is listed among the determinants of adaptive capacity (Smit and Pilifosova 2001; Yohe and Tol 2002; Brooks and Adger 2004; Smit and Wandel 2006; Moser 2009), and in texts about adaptation in Indigenous communities. Citing the work of Neil Adger and colleagues, the NCCARF research plan for Indigenous communities notes, for example, that ‘the understanding of climate risks, and options to adapt to those risks, is itself a significant determinant of adaptive capacity, as is the awareness of the need to adapt’ (C48/Langton et al. 2012: 18). Inadequate understanding of climate change or of the necessity of adaptation within Australian communities is viewed as source of vulnerability, for ‘[a] failure to appreciate the basic threats posed by climate change can inhibit adaptation’ (C50/Productivity Commission: 142). In a study of a Northern Territory community, McIntyre-Tamwoy et al. conclude that, as long as understanding of climate change remains poor, people ‘lack the basic information required to start formulating their adaptive responses’ (2013: 104).

The importance of awareness of climate change as the starting point for effective response points to the role of government in awareness-raising and education initiatives. Information is constructed as a ‘public good’ in several government documents in the corpus (C43/COAG 2012b; DCEEE 2010; C50/Productivity Commission 2012) and it is claimed that government has a role to ‘fill critical knowledge gaps which currently inhibit effective adaptation’ (C13/DCCEE 2007: 3). Measures by government to ensure adequate awareness and understanding are seen to be necessary in Indigenous communities as in all Australian communities. A national emergency management strategy for remote Indigenous communities states that ‘Indigenous communities need awareness and education programs for all aspects of emergencies’ (C14/EMA 2007: 14), for example. Such

initiatives have taken the form of publications designed for community audiences (C26/EPNRM 2009b; C68/Mooney et al. 2014) and workshops and other fora that bring together community members with representatives of government and climate change researchers. The Torres Strait Regional Authority reports that, as a result of ‘constructive collaboration between local, state and federal governments, communities and research partners, the Torres Strait now has a much clearer understanding of local climate change projections’ (C69/TSRA 2014: i). In the following chapters I explore further the construction of the significance and forms of community engagement in the discourse of Indigenous adaptive capacity.

Here I argue that the function of such communication and education initiatives in communities in this discourse extends far beyond the provision of correct and appropriate information about climate change. In light of the limits and uncertainty of the existing knowledge that might be employed in climate change response – including projections of future impacts as well as historical experience and adaptive strategies – the objective of education in the governmentality of adaptive capacity is not the dissemination of any particular, potentially erroneous information. Rather the objective is to instil in the subjects of adaptation an acceptance of the need to adapt and a willingness to engage in the continuous process of learning that is at the core of the broader ‘ongoing change process’ of adaptation. This is achieved through the awareness established among communities in the initial encounter with information about climate change, but the latter is constructed as merely a springboard for further learning. Most important at any given point in the process of adaptation, according to the academic literature, is ‘not that learning *has occurred*’ but that there is ‘willingness to *continue* learning and to experiment’ (Adger et al. 2011b: 764; emphasis added). A report by the Natural Resource Management Board of the Alinytjara Wilurara region of South Australia states that,

‘Individuals and groups will need to begin to apply a *learning orientation to climate change* in order to incorporate appropriate responses into their processes, rather than expecting that knowledge and information external to regional governance and management systems will be able to directly guide specific long-

term adaptation responses – the uncertainty of future climate change and its impacts [...] is just too great’ (C41/AWNRMB 2012: 20; emphasis added).

In other words, with the role of ‘external’ knowledge necessarily limited, Indigenous communities are required to take on ‘a learning orientation’ and with it the responsibility to drive the process of adaptive learning forward.

In the discourse of Indigenous adaptive capacity, the vulnerability associated with a lack of awareness and understanding of climate change that I described above is overshadowed by an emphasis on the existing adaptive capacity of Indigenous peoples to navigate environmental change. This is the capacity to add the new to the old that Indigenous peoples have demonstrated throughout history, as described in the previous section. In the context of climate change, and its uncertain and unpredictable impacts, this capacity is constructed as an openness to the future and whatever it may bring. It is represented in Clark’s representation of ‘Aboriginal cosmopolitanism’ as ‘the nomad’s openness to the past and future’ and ‘general appreciation of the adventure of deep time’ (2008: 742). It is captured in the observation by Green and colleagues in their report on northern Australia that ‘Indigenous people in this region have a more fluid view of the world [than that of ‘western decision makers’], one that is broadly *more capable of dealing with variation and uncertainty in comparison to western thinking.*’ They describe this as an ‘active socio-cultural process’ which ‘represents a remarkable adaptive capacity of Indigenous people that is not well understood’ (C28/2009: 137; emphasis added). This openness, which is seen to have made possible the navigation of environmental change described in the previous section, is targeted in the governmentality of adaptive capacity and expected to be channelled into communities’ ‘learning orientation to climate change’.

The governmentality of adaptive capacity emphasises the uncertainty and indeterminacy of knowledge about climate change, which are seen to necessitate the provisional and flexible approach when employing existing strategies of dealing with environmental challenges that I described in the previous sections. The perceived potential for any knowledge, pertaining to the past, present or future, to prove maladaptive means that all knowledge and belief must remain

subject to constant evaluation and revision. It is argued that ‘the use of local knowledge on past changes in climate is not a sufficient basis on which to develop future plans’ (Dodman and Mitlin 2013: 649; Adger et al. 2011b). Equally, there is a concern that future climate scenarios that could prove incorrect, and that what are referred to in one NCCARF report as ‘misleading models’ ‘may lead to dangerous maladaptation’ (C64/Petheram et al. 2013: 11). Scenarios derived from climate modelling are therefore to be used only as ‘*exploratory decision aids* to provide [...] flexible options’ (C64/Petheram et al. 2013: 11; emphasis added). This flexibility is considered essential to maintain adaptive potential for multiple possible futures. One NCCARF report notes, for example, that ‘the outcome from adaptation planning need not be codified as a specific plan or document, and should be conceptualised in the ongoing social processes that seek to increase the capacity of a system’ (C58/Leonard et al. 2013: 29). This is the capacity ‘to function effectively across a range of more or less foreseeable climate futures’ (29).

As an ongoing and flexible process, adaptation is understood in the academic literatures to consist of interlinked phases of learning and decision-making in which any decisions made remain contingent on the outcomes of further learning (Tschakert and Dietrich 2010). Drawing on the models of ‘adaptive management’ and ‘adaptive governance’ in the study of social-ecological systems, this is theorised as a process of ‘iterative assessment’ and evaluation (Cash and Moser 2000). In these literatures, traditional land management practices employed by indigenous peoples around the world are considered to exemplify the adaptive management approach (Berkes 2018). Reflecting this, in the corpus of texts analysed, an existing capacity to engage in adaptive learning is attributed to Aboriginal and Torres Strait Islanders based on the representation of an attentive and responsive ethic of care for country described in the previous chapter. Traditional burning practices, for example, are seen to reflect the adaptive models promoted in the systems ecological literature. These involve ‘adapt[ing] the fire to whatever climate we get each year [...] This makes the burning time different each year and is done by reading country’ (Hill et al. 2003: 11). Their success depends on the ‘iterative assessment’ that a Yalanji elder quoted by Hill et al. describes when he states that ‘you’ve really got to burn and actually go back, maybe every

fortnight or something, and check the country, so you actually see the change, somebody's got to actually go back there' (2003: 97). This iterative and incremental approach is captured in the description of the 'Healthy Country Plan' of the Balangarra people of Western Australia as involving 'making a plan, doing the work, checking that the work is on track and then looking at the plan again' (C37/Balangarra and KLC 2011: 43).

This recursive process of adaptive learning hinges on the reflexivity of the adaptive subject, whether an individual or community, who is expected to reflect on its own vulnerability and adaptive capacity, and on the effectiveness of the process of adaptation in which it is engaged. The 'active reflection' following disasters mentioned above is represented as an opportunity for individuals and communities to 'review their decisions and lifestyles to reduce their future exposure to disaster' (C38/COAG 2011: 12), for example. It is in references to the capacity for, and central role of, such reflection that the construction of a human agency for transformative change introduced previously is most apparent. The active reflection appears in the discourse of adaptive capacity as the key to transformative adaptation, for it is how the adaptive subject might come to choose to alter those 'decisions and lifestyles' that have left it vulnerable to disasters in the past, to cite the example from the National Strategy for Disaster Resilience once again. By reflecting on the state of their own adaptive capacity, 'interacting, thoughtful (but perhaps not brilliant) agents' (Miller and Page 2007: 3) can purposively seek to further enhance it.

This reflexivity is constructed in systems ecological terms, with the capacity of the subject to reflect on what is required to more effectively go about adaptation theorised in the discourse of adaptive capacity as 'triple loop learning'. This concept has been adopted into the scholarship on resilience and adaptive governance to explain how adaptive subjects might reflexively engage with their own perspectives and knowledges to effect the transformation within *themselves* that is necessary for transformative adaptation (Pahl-Wostl 2009; Tschakert and Dietrich 2010). It thereby 'makes learning to learn an act of adaptation' (Pelling 2011: 62). Where single and double loop learning can account for learning from

the mistakes of the past,<sup>6</sup> triple loop learning involves reflexively engaging with the task of learning itself in order to become a better learner. It occurs when the adaptive subject 'starts to *reconsider underlying values and beliefs, world views, if assumptions within a world view do not hold anymore*' (Pahl-Wostl 2009: 359; emphasis added). The concept of triple loop learning represents an attempt to theorise how the adaptive learner can, recognising the flaws in its own worldview, revise its own way of seeing the world, and in this sense to recursively act upon itself without any external input required.

Thus, while the governmentality of adaptive capacity appeals to a human agency to purposively and 'willingly' engage in the process of adaptive learning, the latter is represented as a self-perpetuating, internal, 'autonomous selection process' of interaction within the social-ecological system (Folke 2006), with little sense of the wider social and political factors and contexts that influence its course and direction. I discuss this in the following section. Importantly, this process of adaptive learning, which involves the adaptive agent seeking to further build its adaptive capacity by improving the knowledges, practices and values that it might apply in adaptive measures, is also frequently represented in this discourse as the full extent of adaptation.

#### **6.4 Explaining adaptive change in Indigenous communities**

As described above, the governmentality of Indigenous adaptive capacity enlists communities in a process of learning that perpetuates itself through iterative evaluation and reflection. The human agency invoked in this construction of adaptation represents one of the ways in which the discursive framework of the social-ecological system can be seen to be accommodating calls for transformative adaptation in the face of non-linear climate change. However, an effect of the pragmatic integration of social and biological theoretical perspectives is that the discourse of adaptive capacity contains a fundamental ambivalence about the significance and potential of this agency. On the one hand, this discourse insists on a role for human agency in driving and choosing the course of adaptation, but – lacking a meaningful social theoretical account of change – it

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<sup>6</sup> Single loop learning refers to improving adaptation strategies and double loop learning refers to revising the assumptions underpinning those adaptation strategies, such as conceptions of cause and effect.

continues to appeal to the metatheory of evolutionary biology, on the other. As Michael Watts has argued, this discourse therefore essentially reproduces the ‘problems of the liberal technocratic functionalism’ of the mid-century systems theoretical models of human adaptation in cultural ecology and ecological anthropology which saw them later fall out of favour in the 1980s (2015: 39). I argue in this section that the exercise of adaptive capacity as it is constructed in this discourse amounts only to its self-perpetuation, reflecting the circularity of the organisation of the living system that I discussed in the previous chapter. I suggest that the limits of this evolutionary biological account are implicitly acknowledged, however, where a role is assigned to government in the discursive construction of the process of adaptation in Indigenous communities.

#### *The circularity of adaptation*

As I have explained, a notion of agency is incorporated into the social-ecological system in the discourse of adaptive capacity as that which is supposed to enable human communities to engage with novelty through the task of understanding unprecedented climate change and effecting the transformative adaptation that it necessitates. The role and potential of this agency to effect change hinges on the distinction between adaptive capacity and the substance of adaptation that I discussed in Chapter 5. The agency that is realised through *adaptive capacity* is thus positioned as an inherent part of the social-ecological system that, like its identity, persists through change and that, indeed, brings about change. *Adaptation*, on the other hand, is the structural change that, like the changing form of the living organism over its lifetime, is an effect of the very persistence of organisation – or life. The effect is that, in line with the underlying logic of the living system, the *process* of building and maintaining adaptive capacity is privileged.

With adaptive capacity privileged in this way, the *primary* purpose and effect of the organisation of the system remains its own persistence, through whatever transformational effects emerge from the self-organisation of the complex adaptive system that is now theorised on the basis of non-equilibrium thermodynamics. This equates to the investment of adaptive capacity *in itself* above all else. This explains how the process of learning described above is



endlessly recursive, perpetuating itself more than it results in the substantive transformative change that it would seem to be intended to facilitate. It is why the task of adaptation is imagined as a process of learning to be more *adaptive*, rather than *adapted*, and why it is possible that it can be argued explicitly in the academic literature that the objective of climate change adaptation is '*not to be well adapted but to adapt well*' (T. Downing, unpublished manuscript, cited in Tschakert and Dietrich 2010: 12; emphasis added).

Thus adaptation appears in the discourse of adaptive capacity to consist in little more than a flurry of learning. The process of adaptive learning in 'constantly changing' conditions (C50/Productivity Commission 2012: 190) is, as I described above, one that remains necessarily incomplete. The Productivity Commission describes the Australian adaptation policy framework as 'a work in progress' (C50/2012: 33) and a 'continual process of adjustment as new risks emerge over time' (2012: 60). The results of the process of adaptation therefore cannot be expected immediately: 'The Strategy is the first step in a long-term, evolving process' (C38/COAG 2011: iii) and 'it will take time to build the skills and knowledge we need' (C33/DCC 2010: 6), meaning that 'the results from an adaption plan will emerge more slowly' (CCA/S/LGASA 2012: 20). Required to accept that, ironically, 'change must be embraced as a necessary and potentially permanent feature of life' (Robards and Alessa 2004: 416), the adaptive subject invests in its own continuity, that is, in the self-perpetuation of its adaptive capacity.

The effect of the discourse of building adaptive capacity, when distinguished from adaptation, is in this way analogous to that of capabilities understood as distinct from entitlements in Sen's development theory (recall that, as discussed in Chapter 3, the former distinction is derived in part from the latter). David Chandler has argued that development, reimagined by Sen and Nussbaum to consist of the 'process of altering the social milieu which shapes our capacities and capabilities for free choices', loses its fixed goal, which has traditionally been understood in terms of material improvement (2013: 5). Thus 'disconnected from the level of material social and economic development' (5), it instead becomes 'a permanent project of self-development'. It is important to note that this has been welcomed as part of a broad pluralising move that has abandoned the singular,

neo-colonial vision of development in the image of the West. In this move, however, Chandler argues that development ‘is deontologised, or rather assumes the ontology of the human subject itself’ (8). I argue that in the discourse of adaptive capacity, which similarly embraces difference, adaptation can be seen to analogously take on the ontology of the adaptive subject, or indeed, adaptive capacity itself. This effect of the discourse of adaptive capacity can appear unproblematic in the Indigenous Australian context because preserving and extending Indigenous culture and identity – that is, investing in the Indigenous subject itself – is in fact an important goal for many Aboriginal and Torres Strait Islander communities, as I discussed in Chapter 4. This reflects, in other words, how the discourse of adaptive capacity has become powerfully attached to the existing Australian discourse of Indigeneity.

This disconnection from ‘the level of material social and economic development’ (Chandler 2013: 5) is concerning in the context of Indigenous communities, however. This is a context in which too often government promises have not led to material outcomes for communities. It is often the case that research constitutes the extent of government action – not unlike the way in which the process of ongoing learning is constructed as constituting adaptive action as I have shown in this chapter. Indeed, communities have already expressed frustration that research frequently results in no action in the climate change adaptation context: ‘The promise of monitoring an already documented problem and continuing to do more scientific research was met with resistance in some TS [Torres Strait] communities’ (O’Neill et al. 2012: 1113). O’Neill et al. argue that “‘doing more research” frequently gets in the way of actually undertaking activity on the ground’ and is seen by communities as a ‘stalling mechanism’ (1114). As early as the 1990s, the community of Warraber in the Torres Strait, on one account by a TSRA representative,

‘had to take into their own hands the building of a seawall because the tides were taking skeletal remains from the cemeteries out onto the reefs. They said to themselves, “We’re not going to sit here and *wait for research and studies; we’ve got to take some action; we’ve got to do something*” — and that is what they did. Even with the sea level today the seawall does its job, and it was

built 20 or so years ago (C31/SCCCWEA 2009: 110; emphasis added).

I argue that the discourse of adaptive capacity allows a detachment of process from both the rationale and the objectives with which adaptive change is undertaken. In other words, with the process of building and maintaining adaptive capacity positioned as an end in itself, considerations of why the process is necessary in the first place and whether it achieves what it is supposed to, are passed over. This allows the promise of transformative adaptation to bring about meaningful change in Indigenous communities to remain empty.

#### *Making the adaptive learner*

An implicit social theory and politics of adaptation is evident in the way that the potential for change is represented in the discourse of adaptive capacity, however. This can be seen in the role played by actors outside the local social-ecological system, in ensuring that adaptation occurs. In the case of Aboriginal and Torres Strait Islander communities, this includes the forms of engagement with communities by government and climate change researchers mentioned above. The role of engagement by these actors represents a recognition of the simple, but extremely important, point that the engagement of adaptive subjects in the process of deliberately adapting to climate change does not spontaneously occur by itself but must be facilitated, at least initially. The need to provide such an external mechanism for adaptation has led the governmentality of adaptive capacity to widen its scope to theorise the input required from outside the social-ecological system as the enabling environment, which I discuss in more detail in the following chapter. The political rationality of the enabling environment represents an attempt, in other words, to account in systems ecological terms for the broader political context in which adaptation occurs.

The input of the enabling environment in the discourse of adaptive capacity takes the form of community engagement about the issues of climate change and adaptation. These channels of communication and education provide the external informational prompts necessary to ensure the awareness and willingness to adapt that I described in the previous section. Through this they catalyse the ongoing process of adaptive learning, which is then imagined to continue under

its own reflexive steam. The significance of such external engagement appears in the transformational account of evolution offer by Levins and Lewontin when they claim that ‘the role of the external world in such developmental theories is restricted to an initial *triggering* to set the process in motion’ (1985: 86) – but it is clear from the centrality of the question of communication in adaptation discourse that such a role for ‘the external world’ is indeed considered essential if adaptation is to occur. Thus the ‘novel entrants’ of inventions and creative ideas theorised in the adaptive cycles of the social-ecological system are not stumbled upon in the same random way that gene mutation, for example, occurs, but rather are actively and deliberately inserted by *another* agency located outside the cycle of learning that is expected to occur in the local community, for example. In accounting for this external input, the enabling environment constitutes an explicit theorisation of the role of governance in adaptation and therefore a key dimension of the political rationality of adaptive capacity.

It is clear from my analysis of the corpus of Australian texts that these channels of communication and education also constitute a mechanism for intervention to ensure that adaptation occurs in the ways that governments and climate change researchers consider necessary. This intervention occurs in cases where willingness to adapt is lacking, where the ‘purposeful behaviour’ of the adaptive subject might be directed to purposes other than the task of adaptation, or to correct misunderstandings or non-adaptive attitudes. For example, a NCCARF report notes that even though or precisely because ‘people [in the Kimberley community of Bidyadanga] had been living with cyclones their whole lives’, they ‘believed that they would simply “go to Broome” and they would “be alright”’ (C58/Leonard et al. 2013: 107). This ‘sense of complacency’ about the potential for damaging tropical cyclones is taken to represent a *low* level of preparedness. Studies of adaptive capacity elsewhere in the world have similarly found that historical experience of climatic extremes can actually impede effective adaptation if, for example, historical experience leads people to adopt an unfounded confidence in their capacity to deal with future challenges that differ from those of the past (e.g. Amundsen 2012). One of the community leaders and participants in the research project commented with concern on this ‘sense of

complacency', arguing that 'we need to change the mindset of the whole community' (C58/Leonard et al. 2013: 107).

I flag here one concern that this acknowledgement of the importance of support the discourse of adaptive capacity may not extend to a kind of learning for which Indigenous peoples have long been seeking support: teaching young people culture. As discussed above, the transferral of a fixed body of traditional knowledges and practices is represented in the context of climate change adaptation and the broader context of hybrid life in contemporary Australia as neither possible nor desirable. Nevertheless, passing on elements of 'traditional' culture to new generations as part of the strategic engagement with the old and the new is considered important by many Indigenous communities, as mentioned previously. Aboriginal corporations in Western Australia have argued, for example, that 'it is important that our kids go out on Country with our elders so they learn their stories and learn about all our knowledge on plants and animals' (C37/Balanggarra and KLC 2011: 31).

For this, it is argued by Indigenous organisations and climate change researchers working with communities, support is required in the form of education programmes and resources for recording traditional knowledge. 'There is a heap of knowledge out there, but are they resourced enough to go out and implement or share that knowledge?' (C02/Bell n.d.: n.p). 'Indigenous peoples need support for the recording, ongoing development and intergenerational transfer of Indigenous knowledge' (C35/NRMMC 2010: 40). The success of efforts to pass on culture to younger generations are described as depending on opportunities to take children onto country. 'We need to be on our traditional lands to practise and remember our rules and to teach our kids' (C51/Yununijarra 2012: 10). 'It is difficult for elders to pass on our traditional knowledge to our younger generation if they are away from their country. We need to go out on country [...] That can happen during school with projects or during the holidays, so families got a chance to visit their country' (C37/Balanggarra and KLC 2011: 31). In the absence of such opportunities, the maintenance of traditional knowledge is not assured.

The construction of an essential Indigenous identity, the transmission of which by definition needs no explanation, already has the potential to undermine the case

for rights and access to land as the basis for maintenance of connection to country and therefore an Indigenous adaptive capacity, as I argued in the previous chapter. I suggest here that the idea of the Indigenous community as a single, collective adaptive subject that I described in the previous chapter also complicates claims for *resources* for community when on country. With the adaptive capacity of the Indigenous community understood in terms of the autonomous circular interaction within the living system that sustains its survival, there is little question of *how* culture is maintained.

This construction of the adaptive Indigenous subject as a system that necessarily perpetuates itself as elders pass on culture to younger people is challenged by an insistence that the community – whatever the significance of this form of association may be in any given context – is *also* in fact a collective of individuals. If the community is viewed as a collective of individuals who exist in a social and political context characterised by various challenges, pressures and choices, cultural perpetuation from one generation to the next simply cannot be assumed. The idea that culture is not held uniformly by a single Indigenous subject can be seen in the following observation that, ‘in the case of the Arabana, and as a function of dispersal, we found knowledge about country, law, history, language and culture was fragmented, and scattered across the nation, *vested in different individuals*’ (C63/Nurse-Bray et al. 2013: 93; emphasis added).

References to the effort and resources that are involved in transmitting culture between successive generations disrupt the construction of the Indigenous community as a collective adaptive Indigenous subject. This differentiation of individuals, and the work involved in sharing knowledge among them is evident in the following excerpt ‘even land knowledge could be being lost very quickly. To manage country traditional ecological knowledge must continue to be a living knowledge that is *invested in*. The old people already tell the young ones things and they write them down’ (Bardsley and Wiseman 2012; emphasis added). It is stated that there is a ‘need to record this knowledge and to *assist its customary flow* to younger generations for incorporation into contemporary Aboriginal land management’ (CC06/KarrkadKanjdi Trust n.d.: n.p.; emphasis added). Likewise, ‘intergenerational knowledge should be *facilitated* for long term impact (C15/L&WA 2007: 2; emphasis added).

I have argued in this section that the provisions in the discourse of adaptive capacity to assist communities to learn about climate change is not matched by a commitment by government to support communities to ensure that young Indigenous people learn culture. The construction of an inherent indigenous adaptive capacity that belongs to a collective subject may undermine claims to the latter. Furthermore, a widespread and loud call for the integration of traditional ecological knowledge into the scientific study of climate change, which I discuss in Chapter 8, must not be allowed to obscure the issue here, which is not about the knowledge of interest to non-indigenous scientists for its potential utility, but about indigenous culture valued for its own sake by indigenous peoples.

## **6.5 Conclusion**

Central to the discourse of adaptive capacity is a construction of the agency of the adaptive subject to purposively effect transformative adaptive change. I have described how this conception of human agency has been integrated into the discursive framework of the social-ecological system to capture the political nature of adaptation, and forms the basis of the governance of an adaptive subject that understands itself as capable of achieving adaptation by choosing how it will ameliorate or learn to live with the impacts of climate change. The Indigenous subject of adaptation is represented in the discourse of adaptive capacity as uniquely capable of this active and strategic navigation of changing conditions. I argue that this is one dimension of the renaturalisation of an essential Indigenous identity in this discourse in terms of a capacity for survival through change, rather than in terms of primordial culture – one which, ironically, bears traces of the interventions by critical Indigenous studies scholars and others who have challenged earlier essentialist constructions of Indigenous identity, instead insisting on a perspective of Indigeneity as necessarily hybrid. I suggested here that this has the potential to undermine claims by Aboriginal and Torres Strait Islander communities for resources and other forms of support from government to carry on valued elements of what might be described as traditional culture.

Despite the recognition of the necessity and inevitability of human choice through this construction of human agency, the biopolitics of adaptive capacity remains dominated by an understanding of the process of adaptation as the functional interaction of the living system. In this chapter I have described how the process of adaptive learning is represented in the corpus of texts I analysed, as well as in the adaptive capacity literature, as a perpetual and self-perpetuating process strangely absent of any meaningful sense of the political context in which it occurs, including the factors and objectives that motivate and direct it. This reflects the distinction that, as I have discussed in previous chapters, is drawn between the process of cultivating adaptive capacity and substantive adaptive action. Here it manifests as a disconnect between building adaptive capacity as an end in itself, and the conditions of vulnerability and development aspirations of Indigenous communities that are in fact the reasons why adaptation is undertaken.

As a site of biopolitical governance, the discourse of adaptive capacity contains conflicting perspectives on the possibilities for human agency to drive transformative change in the face of environmental challenges. I argue that this ambivalence reflects the logic of pragmatic holism of the social-ecological system, whereby social scientific insights have been incorporated to address the limitations of a biological account of the social world. But contemporary understandings of adaptation remain defined by their evolutionary biological roots, with these integrative efforts merely producing what Jesse Ribot describes as ‘hopped-up hazards models [the models of early geographical work on human adaptation] – with extra social bells and whistles’ (Ribot 2014: 678). The effect of this is that, in the absence of a social theory of change, the discourse of adaptive capacity remains effectively trapped in the circularity of the evolutionary logics of the theory of social-ecological system that underpins it. Based as it is on an essentially functionalist account of human adaptation, the governmentality of adaptive capacity effectively requires its subjects to engage in an ongoing process constructed as more important than the ends which it is supposed to deliver.

In other words, this discourse does not achieve what it claims to: to make possible, through the invocation of human agency, the meaningful transformative change of the kind that this discourse itself holds is required in the face of climate



change impacts. I suggest that this discourse will continue to fail to do so as long as a conception of human agency is added into the concept of the social-ecological system, and its biological metatheoretical framework, as an optional extra that is ultimately subordinate to the principles of the functioning of the system. In the following chapter I explore how the concept of the enabling environment, as a provision in the discourse of adaptive capacity for the facilitation of adaptive change in Indigenous communities otherwise lacking the means, is similarly incorporated into the discursive framework of the social-ecological system. This discourse effectively continues to construct adaptation as a natural process that requires no explanation – and for which Indigenous peoples need no additional support.

## **Chapter 7: Enabling adaptation within the nested social-ecological system**

Just as the governmental vision of transformative adaptation within the social-ecological system redefines adaptation according to the necessity of radical change and posits a human agency to drive it, as I discussed in the previous chapter, the discourse of adaptive capacity also re-conceptualises the *scale* at which adaptation occurs and the role of different actors within a multi-level, nested social-ecological system. This chapter examines the extension of social-ecological systems theory to include an 'enabling environment' to facilitate adaptive change. This represents, I argue, a response to the difficulties in explaining adaptive change within the discursive framework of evolutionary biology and the circular logic of the living system that were discussed in the previous chapter. It is the basis of a construction of the role of the enabling environment in providing the necessary governance of the adaptation process. The enabling environment is to do so by communicating information about projected climate change impacts, facilitating the engagement of a variety of actors, and ensuring that communities that face impediments – including Aboriginal and Torres Strait Islander communities – have the resources they need to respond. I interpret this construction of the enabling environment as an explicit theorisation of a key aspect of the political rationality of the discourse of adaptive capacity: the wider political context in which adaptation in Indigenous and other communities takes place.

Here I extend the argument of the previous chapter by showing that the prospects for these forms of intervention to enable transformative change in Indigenous communities are constrained by implicit evolutionary biological logics of the theory of the social-ecological system which construct the process of adaptation

as one of maintaining transformative *potentiality* more than one of committing to action. This has the effect of limiting the extent of the material assistance provided by the enabling environment. With transformative potentiality seen to already exist in an inherent Indigenous adaptive capacity and the promises of caring for country, my analysis of the corpus of Australian texts suggests that one role of the enabling environment is then to harness the potential of caring for country for adaptation in the interest of the whole nation.

In the first section, I describe how the concept of the enabling environment emerged to address the shortcomings of a discourse of localism that has had a powerful influence in recent paradigms of community development and environmental governance, as well as early adaptation thinking. The second section examines the construction of the governmental role of the enabling environment to engage local communities to actively participate in a process of dialogic exchange with the wider social-ecological system, a process through which transformative adaptation is expected to occur. I then look at the logics that govern how the enabling environment invests resources to facilitate adaptation in communities, logics that I argue are derived from the evolutionary roots of the discourse of adaptive capacity. In the fourth section I argue that these logics are concerned above all with the survival of the social-ecological system – which is taken to be the single whole to which the community and the enabling environment alike are now constructed as belonging. In a troubling inversion of the promise of the concept of the enabling environment to enable what would otherwise not be possible, this means that Indigenous adaptive capacity can be employed as a resource for the adaptation of this larger system, whether the region, nation or planet.

### **7.1 The scale of adaptive capacity**

This discourse of adaptive capacity constructs it as an emergent property of a coupled and integrated social-ecological system that effectively encompasses the entire Earth. In other words, adaptive capacity is not isolated to the local system or community, as it was considered to be in earlier theorisations of vulnerability and adaptive capacity, but is rather seen to belong to the local system or community as only one level of a larger system in which the community is

situated. As introduced in Chapter 3, the potential for transformation is understood to ‘draw [...] on temporal and spatial scales above and below the system in focus’ (Folke 2006: 259) and that ‘the reality of building adaptive capacity involves cascading decisions across scales and a diversity of private and public agents and organisations’ (Lemos and Agrawal 2005: 316). As I describe in this section, this represents a reconceptualisation of the role of government. In theorising a role for government in this way the biopolitics of adaptive capacity departs from earlier systems ecological assumptions of adaptation as an autonomous process that occurs through the local interaction of human societies with their environments.

### *The local*

When adaptation entered the international realm of climate change governance and research, it was widely taken to be something that occurs at more local levels than those at which mitigation governance had been conducted (Schipper 2006). The body of research in the disciplines of anthropology and geography from which discourses of human adaptation have drawn had focused on how ‘primitive’ people – understood invariably as local, and typically as tribal – engage with environmental change (Watts 2016), as I described in Chapter 4. Research on the human impacts of climate change has likewise tended to focus on the ways that climate change affects human societies at the local level, and what is unique about the ways that diverse peoples and cultures experience and respond to climate change, in what has since been described as a ‘valorization of the local’ (Head 2010: 239). The idea in the contextual discourse that adaptation must occur by addressing the development needs of communities was articulated within a broader commitment, consistent with the discourse of participatory development of the 1980s and 1990s, to attend to local specificity, authority and claims to self-determination.

Within the discourse of Indigenous adaptive capacity, a scalar logic that privileges the local is central to the constitution of Aboriginal and Torres Strait Islander peoples as a distinct category – itself constituted by numerous, further differentiated nations – with unique adaptation needs and objectives. It is in terms of the peoples’ unique knowledge of the specificity of local country, culture

and circumstances, and their unique capacity to meet the needs and aspirations that arise out of this specificity, that Indigenous peoples strategically articulate their claims to meaningful input into adaptation policy, and to self-determination more broadly. This knowledge and autonomy, it is claimed, is vital to the success of climate change adaptation initiatives, for local planning and decision-making 'enabl[es] communities to respond to these challenges in the most culturally appropriate and locale-specific way' (C69/TSRA 2014: iii). One NCCARF report argues that 'only communities are in a position to determine the best solutions for their unique needs, interests, and circumstances. Solutions imposed externally are likely to be ineffective, inappropriate or unsustainable' (C56/Griggs et al. 2013b: 6). The aftermath of flooding of the Western Desert community of Kiwirrkurra in 2001, which resulted in the complete evacuation of the 120-person community for more than eighteen months and 'considerable social disruption and dislocation' (C48/Langton et al. 2012: 31), is cited as an illustration of the dangers of a lack of community involvement in disaster planning.

Critical voices have long been drawing attention to the potential dangers of a 'valorization' of the local itself, however. This paradigm of localism has come under considerable critique for imagining the community to be insulated from broader political and economic forces (Mohan and Stokke 2000). In the realms of international development and environmental governance, Hart (2001), Watts (1995) and Mohan and Stokke (2000) among others have shown how the emphasis on local autonomy based on the 'post-development' critique of technocratic, top-down development aligns with, and appears to have been all too easily subsumed by, a neoliberal enthusiasm for civil society and 'the powers of "ordinary people"' (Watts 1995: 59). Neoliberal engagement with local communities, including indigenous communities around the world, has in many cases sought to leverage or commercialise local resources and knowledge (Hayden 2003). Likewise, environmental localism, and in particular the hope that local communities could achieve better, more sustainable NRM outcomes – on the grounds that they have a greater interest, knowledge and capacity to do so (Tsing et al. 2005: 1) – 'perpetuates the neoliberal critique of the nation state' (Elliott 2004: 12). In this sense such calls for the autonomy of communities articulate the 'perpetual dissatisfaction with government' that characterises liberal government and which

is intensified with neoliberal rationalities of government (Rose 1993: 292), as described in Chapter 2.

The body of scholarship critical of the localism paradigm has formed the basis of an appreciation of the political-economic context in which local communities are situated and a broad acknowledgement in discourses of climate change that vulnerability is not isolated to the local level. The political ecological scholarship that challenged the prevailing ecological approaches in anthropology and geography, as outlined in Chapter 3, involved a critique of the emphasis on proximate rather than root factors of vulnerability by the hazards school of geography (Hewitt 1983; Susman 1983; Susman et al. 1983; Watts 1983a; Watts 1983b; O'Keefe et al. 1976). This critique had informed the contextual understanding of vulnerability, which has tended to be local in its orientation and has constituted a rationale for mainstreaming adaptation into community development programmes – a move which is, indeed, consistent with the post-development discourse mentioned above. But this critique has also played into a subsequent move away from the local in the revised understanding of vulnerability that can be seen in the discourse of adaptive capacity. As explained previously, this discourse emphasises connections across scale, employing the language of systems theory to describe vulnerability as a 'networked' and 'teleconnected' phenomenon (Adger et al. 2009). The influence of the political ecological argument that the solution to structural vulnerability is a 'transformation' which 'might involve the restructuring of political economies at multiple scales' (Bassett and Fogelman 2013: 46) is plainly evident in the idea of transformative adaptation, for example. The critique of localism constitutes at once a critique of a mode of governance that takes the local as an isolated site of adaptive potential, and a reflection on the ways in which structures of governance may be implicated in vulnerability. It forms the foundations of revised rationalities of government more sensitive to questions of power, justice, history, which have led to the subsequent shifts to place the local community in its wider context in both the discourses of contextual vulnerability and adaptive capacity.

One core line of argument advanced by community leaders in Australian Indigenous politics, as well as in the critique of localism in the international development context, is that communities must not be abandoned, in the name

of agency and participation, to deal with problems on their own – especially as a lack of the means to do so may actually be the biggest problem they face. The question of how to achieve a balance between community autonomy and adequate government support in the Australian Indigenous context is at the heart of a long-standing debate about how to promote the self-governance of Indigenous communities that invariably exist within larger structures of governance. It is one that has dominated Australian Indigenous politics since the 1970s, when moves towards ‘internal decolonisation’ and self-governance began, and it continues to be renegotiated in various ways by Indigenous leaders and government policy-makers (Maddison 2009; Sanders 2002). In recent years, conservative state and federal governments have been cutting funding for housing and basic services in remote communities, particularly in Western Australia, South Australia and Queensland, complicating the political backdrop of the vision of climate change adaptation through caring for country on the vast Indigenous estate articulated in the discourse of adaptive capacity.

In the international spheres of climate change governance, an insistence on the importance of local participation is often accompanied by an insistence that communities are provided with additional resources and support with which to engage in climate change response. In the UNFCCC framework, developing countries and NGOs representing developing communities use the expanding discourse of ‘climate justice’ to persistently demand resources – typically in the forms of finance, capacity building and technology – to address a problem that is, as they point out, largely not of their making (Mace 2006; Horstmann 2011). As I showed in Chapter 3, these claims were made possible by a contextual analysis of the historical and political-economic causes and effects of climate change and vulnerability to its impacts.

Such claims framed in terms of justice arguably lend a greater force to arguments made by Australian Indigenous communities about resources in the context of climate change. As described in Chapter 4, the analysis linking colonialism and climate change by Aboriginal scholar Tony Birch (2016) and others support claims that Indigenous people require additional assistance to respond to the impacts of climate change. It is argued that many are already facing challenges for which they are not equipped. In the words of a resident of Ngukurr quoted in a NCCARF

report, *'people here can't afford to feed their families, let alone feed their families and aircondition the bloody house'* (C53/Bird et al. 2013: 177; emphasis in original). Within the discourse of adaptive capacity, qualifications in the attribution of an existing capacity to Indigenous communities similarly point to the necessity of external assistance. For example, an informant in the report by Bird et al. states, *'I think communities prove resiliently adaptable [...] They will adapt their processes and their requirements and their services. The one that needs attention is access [into and out of communities by road and air]'* (C53/2013: 140; emphasis in original). The reference to access in this statement underlines the importance of infrastructural development by government to ensure physical access to communities, a factor which lies beyond the scope of a community's adaptive capacity.

In the climate change-themed 2008 Native Title Report, the then Aboriginal and Torres Strait Islander Social Justice Commissioner, Tom Calma, asserted that progress in social and economic outcomes cannot occur without adequate government investment – whether with or without the additional challenge of climate change. He wrote that *'much of the failure of service delivery to Indigenous people and communities, and the lack of sustainable outcomes, is a direct result of the failure to [...] invest in building the capacity of Indigenous communities'* (C18/AHREOC 2008: 164). Voices captured in other texts in the corpus also raised questions, based on trends in engagement with government to date, about the outlook for adequate support to Indigenous communities in a changing climate. A director of an Aboriginal corporation in the Kimberley, for example, is quoted as saying, *'I can't see how we're going to play a lead role in getting people to acknowledge and manage climate change [...] unless we have resources, we have backing of council and the community, and acknowledgement, and we have decent funding'* (C66/Tran et al. 2013: 75). In another NCCARF report it is similarly argued that *'Arabana people will need external parties and expertise to help them build, implement and resource climate change adaptation [...] As with all the other challenges they face, they cannot do this alone'* (C63/Nurse-Bray et al. 2013: 94 and 99). I explore in the following section how these calls for support would appear to be answered by the role assigned to the enabling



environment in the discourse of adaptive capacity – which suggests that communities indeed need not tackle the challenges of climate change ‘alone’.

### *The enabling environment*

Local communities are increasingly viewed, on the basis of the critical perspectives discussed in the previous section, as part of a wider context that both enables and constrains possibilities for adaptation. In the discourse of adaptive capacity, this wider context is understood in systems ecological terms. Here it is argued that this external support to local communities needs to take the form of an enabling environment, or a distributed network of actors, institutions, information, resources, and so on. The concept of the enabling environment promises to facilitate adaptation in a way that effectively strikes a balance between allowing the room for communities to direct the course of their own adaptation, but also ensuring that they have what they need to do so. It reflects a vision of adaptation made possible by the adaptive cross-scale dynamics, or ‘panarchy’, of the social-ecological system that I introduced in Chapter 3, and seeks to dissolve or at least reimagine the boundaries between different parts of this teleconnected system. In this sense it represents a particular political rationality of the respective roles of communities and of government in the task of adaptation, which is constructed as a shared one to be achieved through complementary, harmonious engagement.

The concept of the enabling environment is widespread in the realms of international development and environmental governance, where it is evident in particular in the human development paradigm and capabilities theory (UNDP 1998) as well as in the proliferation of hybrid governance models in environmental governance (Lemos and Agrawal 2005). The concept of an enabling environment, and other concepts drawn from the human development paradigm, are also not new in Indigenous policy (Hunt 2005). It appears to be consistent with a call to move beyond an approach that focuses on Aboriginal communities as bounded entities (Hunt 2005), in line with the critique of localism discussed above, making it a powerful one in the Indigenous context. As I explore in this chapter, in one sense the enabling environment would appear to respond to the problems of the ‘valorization of the local’ described above. However, with an

insistence that the function of the enabling environment is *to enable, not to provide*, this concept can in another sense be seen to perpetuate these problems.

Scholars of climate change have drawn on these existing discourses, with the IPCC advocating, for example, a model of governance for climate change response comprising ‘the formation of self-regulating networks between government, the private sector and civil society groups’ whereby regulation arises not from the top but from consensus of multiple actors (Aylett 2010: 482). As discussed in Chapter 3, the discourse of adaptive capacity differentiates itself from preceding discourses with the argument that ‘the “adaptation is local” mantra is no longer valid’ (Burton 2008: 1). Instead ‘multi-scale processes through diverse institutions and in partnership with multiple stakeholders’ are seen to be required for effective adaptation (Brown 2011: 25; Adger et al. 2005). In Australian government documents it is argued that the framework of the enabling environment allows ‘high-level direction and guidance’ provided by the national government (C38/COAG 2011: iii), but also, crucially, the *agility* to orchestrate *a differentiated response with the necessary precision to address local needs*’ (C33/DCCEE 2010: 7; emphasis added). The enabling environment is seen to offer to communities both autonomy and support where they need it, while to governments it offers the capacity to devolve responsibility while retaining a degree of high-level control.

Such a holistic conception of governance is seen to be made necessary by the nature and scale of climate change impacts themselves. It is argued that, because climate change impacts are expected to be diffuse and pervasive, affecting all sectors, the responses to them must be similarly diffuse and integrated across all sectors. Thus decentralisation of climate change response is seen to be required in the sense that ‘the variety of decision-makers’ and the complexity of factors to be taken into account in devising adaptation pathways ‘mean[s] that a prescriptive approach [...] is unlikely to be helpful’ (C54/DIICCS RTE 2013: v). ‘Effective adaptation’, it is therefore argued by the Australian Productivity Commission, ‘will come about through millions of actions undertaken by households, businesses, governments and other organisations responding to the impacts of climate change in ways that are suited to their individual circumstances’ (C50/2012: 38). All of these actors are understood to have a role

to play in adaptation, which involves different actors engaged in different but complementary ways, as captured in the statement in the Australian corpus that ‘governments at all levels, businesses, and the community have important, *complementary and differentiated roles* in adapting to the impacts of climate change’ (C33/DCCEE 2010: 7; emphasis added). This is described by a COAG document as ‘a multi- jurisdictional and cross-functional approach’ (C10/COAG 2002: 70). All parts of the system are considered to have a part to play in bringing about social change and, according to Hallie Eakin, ‘the ‘turn to capacity’ [...] may be the best way to mobilise this recognition for the structural and transformative changes that are so necessary to address vulnerability at its roots’ (Eakin 2014: 229).

Attention to cross-scale effects within the interconnected social-ecological system is seen to become all the more important in the context of a growing sense of the non-linear, unpredictable dynamics of the Earth system and the concerns about abrupt climate change and potential for maladaptation that it raises. Direction from upper levels of the social-ecological system such as national governments is considered particularly important to respond to impacts that are unprecedented and beyond the historical experience of communities, especially where it is argued that applying strategies from the past or leaving adaptation entirely up to local communities could result in maladaptation (Brown 2011). As discussed previously, concerns about maladaptation appear in the Australian corpus where it is suggested that traditional knowledge may no longer be reliable in changing environmental conditions, and where communities are observed to exhibit the ‘sense of complacency’ reported with concern by Leonard et al. (C58/2013). In the academic literature it is accordingly argued that ‘higher level coordination of territorially specific adaptive responses is essential if adaptation efforts are to be broadly effective because at times past experiences of local adaptation are likely to be inadequate in the face of unprecedented climate change’ (Agrawal et al. 2012b: 566). Equally, however, top-down governance structures may cause maladaptation (Preston et al. 2015), if for instance they are not flexible or ‘agile’ enough to respond to rapid, unpredictable non-linear changes. Experience to date suggests ‘adaptation by local actors is often constrained by the structure and interactions of governance systems’ (Preston et al. 2015: 473). The enabling

environment, in contrast, ensures the right settings, neither too loose nor too tight, to enable successful adaptation.

In Indigenous communities in particular, the enabling environment is described as playing an important role as a loose governing framework that provides support and guidance to individuals and communities. One NCCARF report notes that ‘one of the most important roles of government institutions within remote communities is the creation of regulatory and policy frameworks that enable local populations to manage risk’ (C66/Tran et al. 2013: 23). It represents an important acknowledgement that in many cases communities need external support. A COAG document states that ‘investment over time to build capacity is required before community commitment and control is a workable approach’ (C04/n.d.: 4), for example. Within this framework the relationship between communities and the state is often described in terms of partnership: ‘we need more strategic partnerships between government, academia, business and communities to make us more resilient’ (C38/COAG 2011: 18). Indigenous communities – as junior partners – are afforded a degree of autonomy in the name of self-determination, with a simultaneous ‘devol[ution of] power to [local communities], while continuing to provide necessary guidance and support’ (C53/Bird et al. 2013: 210) envisaged in these texts.

The concept of the enabling environment is consistent with the construction of an inherent Indigenous adaptive capacity, with the role of the enabling environment simply to remove the impediments to this endogenous capacity. For example, the NCCARF report by Horne and colleagues observes that ‘the town campers [outside Alice Springs] are well placed to adapt to changing circumstances, including changing climate conditions. However, that capacity is jeopardised by poverty and both chronic and periodic overcrowding, which remains an entrenched problem and cause of community stress, so adaptive practices need to be actively monitored and nurtured’ (C57/2013: 1). The emphasis in this framing of Indigenous vulnerability and adaptive capacity is on what these town camp residents *have* rather than what they *lack*. As Janet Hunt points out, the concept of the enabling environment is considered empowering and has been invoked to characterise ‘capacity “problems” in Indigenous community governance [as] stem[ming] from a disabling, rather than enabling environment or system’ (2005:

18). This framing carries a particular potency and appeal in the wake of the enormously controversial 2007 Northern Territory Emergency Response, or 'Intervention', and the subsequent and ongoing 'Stronger Futures' policy. According to many Indigenous and non-Indigenous critics around the country, the Intervention was rationalised through representations of child abuse and other problems in Northern Territory communities as intrinsic to Aboriginal community life and culture, rather than as effects of community neglect and intergenerational trauma (Altman and Hinkson 2007).

The inclusion of the concept of the enabling environment in the discourse of adaptive capacity has the effect of accounting for how change can come about where it would otherwise not be possible. With this important discursive move, the governance of adaptive capacity and its role in providing the right facilitative conditions is explicitly theorised and painted into the picture of adaptation offered by the discursive framework of the social-ecological system. It is argued that 'governance cannot be viewed as external to the SES; institutions and organizations arise from within the social-ecological system and must self-regulate while remaining within the limits determined by ecosystems' (Norberg and Cumming 2008: 286). Crucially, this integrative systems ecological logic thus insists that the governance structures that direct what happens in local social-ecological systems, far from being artefacts of human politics that must be understood in a distinct way, can be brought into the same conceptual framework that encompasses both the 'social' and the 'ecological'. This is a logic that does not privilege any one level – local, national, global – over any other, but insists that they are fundamentally interconnected. An ambiguity about the nature of this interconnectedness and how the boundaries between levels are drawn has implications that I explore later in the chapter. In the following section I describe further how the interaction between the parts of this expanded social-ecological system is constructed as playing a facilitating role in the process of learning to live with the impacts of climate change that I discussed in the previous chapter.

## **7.2 Enabling adaptation**

As described in the previous chapter, adaptation is constructed in the discourse of adaptive capacity foremost as an ongoing process of learning about the impacts of

climate change and reflecting on what is required to enhance adaptive capacity. While this process is expected to be driven by the adaptive agent, it also involves the engagement of the adaptive subject with the wider social and political contexts in which they undertake adaptation – a context theorised as the enabling environment that I introduced above. The significance of the role of this political context in the governmentality of Indigenous adaptive capacity is evident in the following excerpt from a NCCARF report: ‘Only time will tell if there is *enough political will* to support the project’s Aboriginal collaborators *who are themselves the change agents* needed to fulfil the broader aims of this study’ (C60/Memmott et al. 2013: 8; emphasis added). In this section I show how the engagement of the enabling environment with these ‘change agents’ is broadly represented in the academic literature and in the Australian corpus as consisting of a process of *dialogue*. I argue that this construction has been influenced by the integration of critical insights about the politics of this engagement into a systems ecological view of the functional interaction within the social-ecological system

Government and climate change researchers are seen to have an important role to play in providing the information and other forms of support that prompt the adaptive Indigenous subject to engage with the challenges of climate change in the ways described in the previous chapter. These communication and education initiatives are taken to represent a form of intervention by the enabling environment considered essential to ensure awareness of the threat of climate change and willingness to adapt. It is argued that ‘the reality is that local societies now [...] operate in a modern globalised world, and depend on outside goods and services to survive [...] In this context, the prominence and dominance of Western science plays a crucial role (C63/Nurse-Bray et al. 2013: 94). In the provision of science and other ‘outside goods and services’ through such education initiatives in Indigenous communities, it is claimed, however, that ‘the focus needs to be on engaging local people and other stakeholders, *so that they take on the challenge* of understanding what climate change will mean for the region and begin the dialogue on how it should be managed’ (C41/AWNRMB 2012: 112; emphasis added). Reflecting the role of the enabling environment to merely enable, not to ‘provide’, the objective of engagement with communities is to ensure that they ‘take on the challenge’ to ‘continue learning’ in the self-driven ways described in

the previous chapter, but to do so within the frameworks for engagement established by the enabling environment.

The process of engagement between communities and outside actors, as well as within communities, about how to go about climate change adaptation is typically framed in the governmentality of Indigenous adaptive capacity as a dialogue, as suggested in the excerpt from the AWNRM report above. Whether referring to the initial awareness-raising initiatives to secure the participation of communities, or subsequent decision-making about what adaptation is to involve by these communities themselves, this engagement is equally represented as the exchange of perspectives and information among actors with the common interest of advancing adaptation. In the climate change communication literature this dialogue is seen to involve the 'exchange of other-than-scientific viewpoints and needs, and the integration of climate change with other-than-climate-change concerns' (Dilling and Moser 2007: 15). Here 'dialogue and developing a local understanding of the challenges of climate change' is considered a means to 'effect change from within' (Ensor and Berger 2009: 231). In the Australian corpus, this engagement is described as a 'process [that] should incorporate information provision and a dialogue with the community about the risks posed by climate change' (C50/Productivity Commission 2012: 80). It is argued that 'an ongoing dialogue with stakeholders is essential to [...] formulating an effective response' (C11/DEH-AGO 2005: 117).

The construction of interaction between Indigenous communities and other actors in terms of a dialogue is informed by efforts in psychology and communication scholarship to identify more effective modes of engagement with lay public audiences about the issue of climate change. In these fields there is a widespread acknowledgement of the need to move beyond "'one way" message-oriented' behavioural change campaigns that are associated with the 'deficit model' of science communication introduced previously (Corner et al. 2014: 417; Nerlich et al. 2010; Dilling and Moser 2007). Some scholars in these fields of research have looked to the observations in the STS and other critical literatures about why people choose not to engage with the scientific information communicated to them, which have pointed to issues such as a lack of trust in scientists, a perception that the science is irrelevant to their lives, and an

alternative model of social agency (Jasanoff and Wynne 1998; Eden 1996). While STS scholars have underlined that these issues are just symptoms of the deeper and unacknowledged politics of scientific knowledge, scholars and practitioners of climate change communication are increasingly investigating and seeking to strategically address these issues (e.g. Lucas et al. 2015; Kellstedt et al. 2008). They have done so by re-envisioning engagement with local communities as an exchange of perspectives, or dialogue, that attends to the specific contexts in which people encounter and respond to climate change, including the priorities and concerns that may influence how they respond (Wolf and Moser 2011; Dilling and Moser 2007). Traces of these critical insights and their incorporation into the discourse of adaptive capacity can be seen in the construction of engagement of Indigenous communities and their enabling environments in the corpus.

Reflecting the now widespread emphasis in these fields on ‘values-based communication’ (Corner et al. 2014: 417), many of the texts in the corpus about Indigenous adaptation underline the ‘need to tailor communication products to the target audience to ensure relevance and usefulness’ (C70/Connor 2015: 6). They refer to the importance of ‘anchoring’ vulnerability research and community engagement in the ‘place-based’, ‘lived’, and ‘in situ’ experiences of community (C60/Memmott et al. 2013: 26). It is seen to be crucial that these communication initiatives also allow the ‘voice [of Aboriginal and Torres Strait Islander peoples] to be heard in discussions with policymakers’ (C55/Griggs et al. 2013a: 33). Efforts in ‘two-way’ or ‘both-way’ engagement that involve ‘training in both directions and a cross-cultural exchange’ (C56/Griggs et al. 2013b: 7) are seen to address the sense of powerlessness and lack of trust that Indigenous peoples have experienced in historical interaction with government and researchers, as discussed in Chapter 4. Successful engagement is then seen to depend on ‘develop[ing] and maintain[ing] positive and meaningful relationships’ (C13/EMA 2007: 20). The cultivation of relationships of ‘trust, respect, and the recognition that the concerns, standpoints, needs and knowledge of all involved are legitimate’ promises to give rise to cross-cultural exchanges that have been described as ‘encounters of mutual enrichment’ (C56/Griggs et al. 2013b: 7).

Through such attention to the politics of different modes of engaging communities in climate change response, the *process* of dialogue itself has taken



on a great deal of significance in the governmentality of adaptive capacity, irrespective of any substantive outcome. It is suggested in a NCCARF report that the 'adaptation process, which is inclusive *along the way*, as much as seeking an end point is invaluable' (C63/Nursesey-Bray et al. 2013: 89; emphasis in original). It is suggested that the 'collaborative [...] use of scenarios could have many benefits', for example, including the 'promot[ion of] relationship building and trust between the Indigenous community and researchers/practitioners' (Green et al. 2012: 306). With dialogue understood as '*a continuous and dynamic process unfolding among people that facilitates an exchange of ideas, feelings, and information as well as the forming of mutual understanding and common visions of a desirable future*' (Dilling and Moser 2007: 15; emphasis in original) through which the learning examined in Chapter 6 occurs, it remains necessarily incomplete in the same ways I described there. In addition to a genuine concern to address the violence of previous approaches to engagement in Indigenous Australian communities, the emphasis on the *process* of dialogue here reflects a systems ecological logic that locates adaptive potential in the persistence of functional interaction within the social-ecological system.

Engagement with communities through this dialogic process is constructed in systems ecological terms as a means to work towards the goal of adaptation by achieving cohesion among the efforts of diverse actors. It is a process of 'manag[ing] divergent interests, agendas, resources and expertise of multiple partners working together towards shared goals' (C24/NAILMSA 2008: 6). While diversity is celebrated, this is informed by a pragmatic 'recogni[tion] that improved disaster management outcomes in remote Indigenous communities', for example, 'will only be achieved if the associated systems and structures [are] flexible, responsive to and accommodate the values, priorities and practices of Indigenous Australians and their communities' (C04/COAG n.d.: 1). This involves the 'equal sensitivity to overlapping interests and needs' that is envisaged in the multi-level participatory governance model prescribed in the political rationality of adaptive capacity (Dodman and Mitlin 2013: 647). In this mode of dialogic engagement, the roles of different actors complement one another, for 'adaptation is likely to be more effective where roles and responsibilities operate seamlessly' (C15/PMSEIC 2007: 1). In these ways, cohesive, trusting and mutually

responsive relations among actors are seen to allow communities and the actors in their enabling environments to work towards the common goal of building adaptive capacity and transformative potential.

The cultivation of Indigenous adaptive capacity is constructed, as I have shown here, as depending on the engagement of communities with their enabling environments. This engagement, which facilitates adaptive learning by making available the knowledge and other resources required for adaptation, is represented as a process of building relationships through ongoing dialogue. I argue in the following section that, as a valued end in itself and understood to be analogous to the functional interaction of the living system, this mode of engagement is viewed as a means to maintain adaptive potential more than it is the basis of substantive adaptive measures.

### **7.3 The potential for transformative adaptation**

In the discourse of adaptive capacity, and in the theory of the social-ecological system from which it draws, the relations between the parts of the system determine their prospects in the face of environmental challenges. With the construction of the enabling environment, these relations are represented as taking the form of dialogue between the adaptive subject and other actors in its wider political and social context, as I described above. I argue in this section that the adaptive potential, including the scope for a politics of transformation, of this dialogic interaction is, however, defined by a conservative logic of survival derived from evolutionary theory. The latter implicitly influences the prioritisation of action and resources for adaptation within this single, extended social-ecological system. In the governmentality of Indigenous adaptive capacity, this has the effect of undermining the very thing that the enabling environment is intended to achieve: the facilitation of Indigenous agency for transformative adaptation.

#### *The economics of flexibility*

The most fundamental imperative that governs the process of adaptive change, as it has been constructed on the evolutionary biological foundations of the discourse of adaptive capacity, is simply that the organism or living system *survives* the challenges presented by its environment. Darwin's theory of

evolution suggested that the prospects for the survival of the organism are determined by the relations within which it is situated in its environment. He viewed 'all survival on earth [as] socially determined' in the sense that nature is 'a web of complex relations' and 'no individual organism or species can live independently of that web' (Worster 1994: 156). The relations within this web, which would become the object of the discipline of ecology, were famously theorised by Darwin as primarily of a competitive nature, defined by a world of scarcity and precarity. Based on a premise informed by the work of Thomas Malthus which held that the environment offers only a limited number of niches or 'places', organisms are seen to be engaged within the 'economy of nature' in a struggle for the survival of the fittest. The effect of constant competition, in this evolutionary perspective, is that the 'entire economy progresses toward an ever greater overall efficiency' (158). This logic of efficiency appeared in the theory of the operation of the system in systems ecology and is retained in the way that human adaptation to environmental change is thought about today, influencing the rationality of government associated with the discourse of adaptive capacity.

Extending these economising assumptions, it has since been maintained in systems ecology, and in the ecological approaches to the study of human adaptation in anthropology and geography, that living systems respond to environmental change by making only the most minimal changes necessary to ensure survival, avoiding 'excessive or unnecessary commitments' in the process of adapting (Watts 2015: 43). The 'economics of flexibility' approach in ecological anthropology has been described as reflecting the concerns of the 'new ecology' with agency, process and contingency, shifting emphasis to *maintaining flexibility in the process of survival*, away from the understanding of adaptation *achieving a state of fitness* (McCay 2002). This approach holds that 'responding adaptively to [...] hazards involves [...] not only deploying resources to cope with the immediate problem but also leaving reserves for future contingencies' (Vayda and McCay 1975: 294). This means that '*minimally costly* responses are tried first so as not to over-commit the organism before it is necessary to do so' (Lees and Bateson 1990: 260; emphasis added).

As Michael Watts has argued, the logic of evolutionary flexibility can be discerned in current approaches to climate change, where it is maintained that 'adaptive

capacity and adaptation are the resources and processes that work to maintain the function of a system in a manner that does not lead to loss of future options' (Nelson 2011: 114). In the Australian adaptation context, this logic aligns seamlessly with the logic of efficiency that features in neoliberal government discourses. This is exemplified in a report commissioned by the Department of the Environment and Heritage in 2005, which states that 'governments should work to ensure [...] outcomes that promote: efficient use of scarce resources; flexibility and mobility; forward looking behaviour; and responsiveness to changing economic conditions' (C11/DEH-AGO 2005: 115). More than just about saving costs, however, I argue that this discourse constructs adaptation as an ongoing process of weighing up and prioritising options, and keeping them open for as long as possible. It involves being prepared for change, ready to respond in any way deemed appropriate as change unfolds. The governmentality of adaptive capacity requires of its subjects this readiness, or what is referred to in the biopolitics literature as preparedness (Grove 2014b; Anderson 2010; Collier and Lakoff 2008).

It is argued in the corpus of Australian texts that maintaining flexibility is important because it is not known what will be required for adaptation in the future. This is apparent particularly where it is increasingly argued that the impacts accompanying non-linear climate change are likely to be more unpredictable than previously thought. This is associated with a pervasive wariness in the discourse of adaptive capacity about the ways in which action taken in the present could undermine capacity for adaptation in the future. 'Good adaptation options', according to an Australian government report, include those that ensure that the 'management of risks [...] today does not compromise that capacity to manage risks [...] into the future' (C54/DIICCS RTE 2013: 38). The logic of the economics of flexibility addresses these concerns because it suggests, on the one hand, that excessive or, crucially, potentially maladaptive action is not rushed into, while it also implies on the other hand a readiness and an agility to monitor and respond to impacts as they may worsen over time. Both elements can be seen in the statement in the claim that 'Australians will be better off if they *start thinking now* about how to manage the impacts of a changing climate. This *need not imply that immediate, costly action will be necessary*, but early

consideration and planning means that *a broader range of options can be assessed*' (C54/DIICCS RTE 2013: 5; emphasis added).

The adaptive responses consistent with the principle of the economics of evolutionary flexibility consist in anticipating climate change impacts in order to maintain a preparedness to mobilise the initial, first line of defence against them. The orientation to the future that underpins the process of learning described in Chapter 6 – and, in particular, the role of climate scenarios as 'exploratory decision aids' (C64/Petheram et al. 2013: 11) – is crucial, for response is seen to depend on existing knowledge of what to do in any given scenario. One of the 'leadership messages' of the National Strategy for Disaster Resilience, for example, is 'get ready, then act – reduce the effects of future disasters by knowing what to do' (C44/COAG 2012: 9). 'Knowing what to do' does not imply only one strict predetermined sequence of responses, however. The economics of evolutionary flexibility prescribes plural, contingent options. 'Diversification is the primary strategy' (Folke et al. 2005: 446), it is argued in the literature on the social ecological system, for adaptive response depends on 'creative exploitation of contingent [...] events and processes' (Watts 2015: 40).

The conservative logic of the economics of flexibility prescribes the kinds of adaptive measures that would prove useful and worthwhile in any future scenario – or what are widely referred to in the context of climate change adaptation as 'no-regrets' action. Because it is argued that adaptation cannot and should not be undertaken according to any single, fallible scenario of future climate change, it is expected to consist of many relatively small actions that are likely to prove effective in a range of eventualities. An Australian government document notes, for example, that 'the risks associated with such uncertainties can be managed by building capacity for flexible and effective responses to the range of likely changes' (C15/PMSEIC 2007: 44). This can also be seen in the following excerpt from a NCCARF report: 'Some communities experience power-outs on a fairly regular basis [...] While it is difficult for people to prepare for specific events of such nature, there are certain things that they can do in general preparation, such as always having a battery powered torch and a radio on hand' (C53/Bird et al. 2013: 125-6). Here the logic of the economics of flexibility manifests in the idea

that the minimally costly, 'no-regrets' action of procuring a torch and radio is sufficient for adaptation.

Typically excluded by the economising logic underpinning the discourse of adaptive capacity is consideration of the kinds of adaptation measures that would be more costly, but also more transformative in the sense of having a more meaningful, positive impact in Indigenous lives and advancing broader community development goals. In the situation referred to by Bird et al. in the excerpt above, that of power-cuts during extreme weather events, more genuinely transformative but costly adaptation could include measures to ensure security of electricity supply to communities, such as back-up generators or distributed renewable energy options. However, the logic of the economics of flexibility embedded within the discourse of adaptive capacity helps to make it reasonable for governments to instead encourage communities to stock torches and accept black-outs as par for the course. In this sense, the role of the enabling environment is limited to facilitating adaptive action that leaves in reserve the resources that may be needed later as impacts intensify, minimising the risk that investment in the present could prove to be maladaptive in the future. In this way this logic functions in the governmentality associated with the discourse of adaptive capacity as a rationalisation of the commitments embedded within an existing agenda of neoliberal governmentality.

### *Surviving in potentiality*

Through the economical logic that seeks to conserve resources for only those circumstances in which they are absolutely necessary, the process of adaptation is constructed as one that in large part consists of waiting in readiness to see what the future will bring, and the adaptive Indigenous subject, like other Australians, is governed to actively maintain this readiness. In this sense adaptive capacity is understood to consist in what Gregory Bateson called an 'uncommitted potentiality for change' (1972: 497). This adaptive potentiality is seen in theories of the adaptive system to support the very survival of the system. In his influential 1973 paper on ecological resilience, Crawford Holling argued that 'persistence [is ensured] by maintaining flexibility above all else' (18). In this discourse this

*potentiality for change* therefore has significant value in itself, irrespective of whether it comes to be realised as substantive change.

The importance of this potentiality is evident in the discourse of Indigenous adaptive capacity where preparation for adaptation through learning and dialogue is an end in itself. In their NCCARF report, Nursey-Bray and colleagues cite the adaptive systems literature to suggest that ‘the dynamic potential of the system’ can be ‘unleash[ed]’ with an approach to the engagement of traditional and scientific knowledges in which the focus is not on ‘seeking the answers’ but rather simply on the initial and more fundamental step of ‘try[ing] to make sense of the situation’ (C63/2013: 94). Indeed, maintaining the potentiality for change is considered important in the discourse of adaptive capacity precisely because it need not and should not always translate into substantive change. It is associated with what ecological anthropologists have described as a ‘*built-in time lag* for evaluating the magnitudes, duration, and other characteristics of problems, as well as the effectiveness of solutions’, which is ensured by the economics of flexibility described above (McCay 1978: 415-416; emphasis added). This ‘lag’ is considered essential because it prevents maladaptation or unnecessary mobilisation of resources by ensuring that options are weighed up and kept open for as long as possible. In the theory of the panarchy of the social-ecological system that I introduced in Chapter 3, this lag is theorised as part of the scalar interplay of the ‘transformative’ and ‘sustainable’ dynamics. Transformation typically occurs only following a period in which the potential for change ‘accumulates’ at lower levels of the system – a period which, by isolating ‘experiments’ in novelty, ‘reduc[es] risk to the integrity of the whole structure’ (Holling et al. 2002b: 73). In these ways the process of maintaining potentiality, in which evaluating options can delay or even occur in lieu of substantive change, is seen by theorists to support the survival of the system.

This explains how the ongoing processes involved in maintaining this potentiality – that of learning and dialogue described in this and the previous chapters – have been ascribed a value independent of whether this potential for change is realised, and have thus come to constitute a large part of adaptation. But in the governmental programme associated with the discourse of adaptive capacity, adaptation consists only in the engagement of the adaptive subject in these

processes and the small ‘no-regrets’ measures to maintain capacity in preparation for further adaptation. As scholars of biopolitics have observed, the governmentality of preparedness, and its logic of potentiality, can amount to a deferral of action, with its ‘sphere of operation’ consisting of what follows ‘*after* a precipitating event’ (Anderson 2010: 791; emphasis added). As I discuss further in the following section, the transformative adaptation which the enabling environment is supposed to make possible may remain unrealised, with the change envisioned in the discourse of adaptive capacity amounting only to investment in further potential for change.

#### **7.4 The whole and its parts**

According to the logic of the economics of flexibility that governs the potential for adaptive change in the theory of the social-ecological system, as described above, transformative change can be undertaken only when it is unambiguously in the interests of the survival of the system. With the system in the discourse of adaptive capacity one that is expanded out to effectively encompass the community and its enabling environment, as I discuss in this section, it is the survival of the *whole* system – the nation or indeed even the Earth – that is at issue. This logic underpins a rationality of government that submits all possible courses of adaptation to consideration of whether they are in the best interests of this larger whole. The extent to which transformative adaptation in Indigenous communities may be realised is therefore defined and constrained in this discourse by the extent to which such transformative change is in the interests of the wider system of which these communities are a part. Where Indigenous interests are deemed not to be consistent with national interests, this logic would see Indigenous political claims on the Australian state go unmet. This would mean, I argue, that the very function which the enabling environment purports to serve – that of providing much needed support and resources to communities – is undermined by the discourse to which it belongs.

The coupled social-ecological system that features in the discourse of adaptive capacity is, as I have explained previously, conceived as a multi-level, nested system consisting of a hierarchical scale from individuals through households, communities, states and beyond to the international sphere. Evident in the



scholarship on the social-ecological system is an ambiguity around how the boundaries between the parts of the system are to be understood. While systems ecologists insist that distinguishing the parts or levels of such a system from one another, or from the whole, is an ‘epistemological mistake’ (Folke 2006), in the discourse of the social-ecological system, the levels of this nested hierarchy tend to be ‘treated as separate *subsystems* that are *interconnected*’, as Johannes Hedrén observes (2014: 64; Mulligan et al. 2016). Indeed, it is only as entities that are in some sense distinct from one another that the engagement between the Indigenous community and its enabling environment – engagement that might facilitate the exchange of information or the redistribution of resources, for example – can be meaningful.

An integrative thrust that constructs all the levels as part of a single system, subjecting them to the principles governing the adaptive potential of the unified whole, is a powerful element of the discourse of adaptive capacity, however. This system is represented as facing *as one* any environmental challenges that threaten its survival. It is the imperative of the survival of the whole that govern the dynamics of ‘sustainability’ and transformation in the theory of the social-ecological system. Adaptiveness is defined within the Earth system governance framework as ‘the ability to change governance elements to respond to new situations, *without harming both credibility and stability of the entire system*’ (Bravo 2009: 261; emphasis added). This implies that all of the processes involved at any level of the system or in the function of any given element of the system – whether it be a household, city, or an ecosystem, and whether it be in a state of stability or a process of transformation – must be consistent with those of the larger system of which these are just a part. This can be seen in the way that the logic of the economics of flexibility appears in the discourse of Indigenous adaptive capacity, as analysed above, where transformative options at the level of the community tend to be precluded by consideration of the costs to the wider system of the benefits of investment at the level of the community. While this is hardly a novel observation with respect to Australian Indigenous policy, it shows that it is the whole system to which the logic applies.

Dovetailing neatly with an existing neoliberal discourse, these logics can be deployed to rationalise an unwillingness on the part of government to provide the

resources for transformative change that Aboriginal and Torres Strait Islander communities have long sought. On the economising assumptions that govern the potential for change in this conception of the system, the enabling environment essentially provides as little support as it can get away with providing. This echoes the critique that the discourse of resilience reproduces the neoliberal tendency to support 'the status quo and "business as usual"' (Brown 2013: 110; Walker and Cooper 2011). Thus it can be seen that the challenge of climate change adaptation has so far done little to change the picture of failed government investment that Tom Calma referred to a decade ago, as cited above. The caring for country initiatives that now constitute a core part of the Indigenous climate change adaptation discourse have, for example, received only unstable and generally inadequate government funding and support since they began to be formalised as official programmes in the 1990s – governments' own rhetoric around the importance of Indigenous NRM notwithstanding (Kerins 2012). Through the 'Country Needs People' campaign, an alliance of over 40 Aboriginal and Torres Strait Islander land and sea management organisations are calling for support to expand and secure their programmes (n.d.) – sending the message 'it's working, invest in success' to former Prime Minister Malcolm Turnbull, for example (Davidson 2016).

A particular challenge in securing funding is that the caring for country work that Indigenous people carry out when on country is not always recognised as *work*. 'It's not that [remote indigenous people] have no work, but that the work they are doing is not recognised, valued or remunerated by the dominant society's economy' (Davies 2006, unpublished manuscript, cited in C15/L&WA 2007: 24). This points to a tension evident in how the issues of funding and employment in ranger programmes are approached, as I mentioned in Chapter 5, that is related to the construction of connection to country as an element of Indigenous identity. On the one hand, Indigenous voices in the climate change adaptation space insist that it is essential that more 'comprehensive and long-term formal opportunities for education, training and employment [are created] so that new NRM opportunities can be seized by local communities' (C41/AWNRMB 2012: 17). This is because rangers depend on adequate funding to carry out their work as well as remuneration to support livelihoods which inevitably exist at least partly within

the market economy. This can be seen in the vision of the Bardi Jawi IPA Management Plan that 'a core of experienced rangers will be highly trained and develop careers in the field of Land and Sea Management' (C52/Bardi Jawi and KLC 2013: 48). On the other hand, caring for country is described as something that exceeds the confines of what is thought of as employment in non-Indigenous Australia. This is captured in a statement by Plangermairreenner elder Jim Pura-lia Meenamatla Everett that 'we're lost if we need money to keep culture alive!' (cited in McConchie 2003: 62). The references above to 'training' and 'careers', for example, can appear at odds with the discourse of caring for country as not so much a set of skills and practices but an ethic or way of life.

In other words, on one hand is an insistence that caring for country is only possible with adequate support in the form of training, wages, as well as the technology and infrastructure needed to tackle contemporary environmental challenges in Australia; on the other is a construction of caring for country that occurs even in absence of such material means. This tension therefore constitutes for the Indigenous subject another double bind associated with the construction of an inherent adaptive capacity in the context of climate change adaptation. At stake here, as I argue throughout this dissertation, is Indigenous identity. Rangers are effectively presented with the choice of *either* taking on this responsibility for caring for country without adequate funding and support, or, in insisting on 'training' and 'careers', to potentially fail to qualify as Indigenous enough – including, paradoxically, Indigenous enough to qualify for employment in caring for country.

Through the construction of an inherent adaptive capacity, the adaptive Indigenous subject is therefore represented as already having the resources required to undertake climate change adaptation through caring for country. With caring for country represented as something that does not require material resources – just as connection to country is articulated as an element of Indigenous identity that can withstand physical disconnection to country, as I argued in Chapter 5 – claims for support for caring for country activities are undermined and the scope of the indigenous caring for country work potentially constrained. This bolsters the political rationality associated with the discourse of adaptive capacity which maintains that the enabling environment need *only*

enable, not provide. Indeed, this biopolitical construction of Indigenous adaptive capacity implies that the potential for transformative adaptation lies within the Indigenous subject itself. This discourse appeals 'to communities to realise their potential and harness their resourcefulness despite the acknowledged fact that it is not the communities which can ultimately alter the direction of future development', as Heidi Sinevaara-Niskanen argues is a function of the closely related discourse of resilience (2015: 197). This reflects the way that the onus for transformation is theorised by systems ecologists as typically lying with the lower levels of the nested social-ecological system. As noted above, in the theory of the panarchy of the social-ecological system, transformation is represented as typically being the effect of a push for change that accumulates from below. If they are to succeed, transformative dynamics at smaller scales must effectively overcome the countervailing 'sustaining' dynamic that, with the 'built-in time lag' that 'isolates' accumulating transformative potential, protects the system from destabilisation. This resistance to change inscribed within the theory of the social-ecological system represents a very different picture to that promised by the construction of the enabling environment in the discourse of Indigenous adaptive capacity.

To the extent that Indigenous adaptive capacity is seen to hold the transformative potential of caring for country, Indigenous peoples are *themselves positioned as resources* to be leveraged to tackle the problems of climate change in the interests of the wider system. The fact that, as argued in Chapter 5, this adaptive capacity resides not within specific knowledges and practices that might be replicated by non-Indigenous NRM workers so much as within connection to country itself means that it is Indigenous peoples themselves that figure in this discourse as the resource to be taken advantage of – through, for example, their 'important role as "eyes and ears"' (C34/NAISMA 2010: 22). And with the benefits of caring for country potentially extending beyond Indigenous communities themselves to the entire nation, or even the globe, this is a resource that is expected to be shared: 'With an intimate knowledge of the environments in which we live, it is expected that we will also be required in some instances to contribute to the adaptation effort' (C18/AHREOC 2008: 148). It is suggested that 'fire gives Indigenous people a platform to provide a significant contribution to

the management of country for [...] Australia to benefit from', for example (Hill et al. 2004: 10). Accordingly, it has been argued that 'Indigenous economic development and enhanced social wellbeing on the national Indigenous land estate should be a key objective of Australia's response to climate change' (Ross and Gerrard 2008: 9), affording opportunities, but also subscribing Aboriginal and Torres Strait Islander peoples to a compulsory Indigeneity articulated in terms of connection to country. The expectation that Indigenous peoples play their part points to the holism of the theory of the social-ecological system, and its discourse of unity, which I explore in the following chapter.

When the representation of the Earth and all of humankind are reduced to that of the single Earth system, so too do its prospects tend to be reduced to those of either surviving or perishing, and its adaptive options to either sustaining or transforming existing ways of life. This leaves little room in the picture to consider what each of these would mean within the system. With transformation evaluated only in terms of whether it would advance the interest of survival of the system, excluded is a sense that there is more than one way for a system to survive, that some ways are better than others – and that, in a multi-level system, the survival of the whole is experienced differently by the different parts. Critical scholars have pointed out that the survival of the system defines and constrains the desirable course of transformation in response to environmental pressures, excluding considerations of the 'normative' character of transformation (Healy and Mesman 2014). The following chapter turns to this construction of a unified whole, and how it elides difference between the parts of the system, subordinating the interests of each to those of whole, and undermining the grounds on which they might make political claims.

## **7.5 Conclusion**

This chapter has examined the construction of an expanded social-ecological system that includes Indigenous communities nested within what is widely referred to in the academic literature and in my corpus as an enabling environment. This construction of the nested social-ecological system is the basis of a governmentality that explicitly prescribes a role for institutions of governance in engaging adaptive subjects, and promises to make climate change adaptation

possible through the exchange of information and resources between actors within the wider political context. The integration of a theorisation of this political context and of the possibility of such political engagement into the discursive framework of the social-ecological system is yet another manifestation of its pragmatic holism. This logic of pragmatic holism has, as I have argued previously, seen social and biological perspectives brought together within the discourse of adaptive capacity in efforts to better envisage the possibilities for human adaptation to climate change.

As I have shown in this chapter, the governmental vision associated with the discourse of adaptive capacity constructs the process of dialogue among various actors as effectively an end in itself – as it does those of caring for country and learning discussed in the previous chapters. The adaptation options made possible in the course of this ongoing process of engagement, understood in systems ecological terms as the functional interaction of the living system, are circumscribed by logics of economism and flexibility drawn from evolutionary biology. These logics are reproduced in the governmentality of adaptive capacity in the requirement that the adaptive subject maintain a state of preparedness in the face of climate change impacts.

My analysis suggests that this governmentality amounts to little more than preparedness, however, with the possibilities for adaptation within this system limited by the priority given in this evolutionary biological framework to maintaining the potential for transformation over the commitment to any particular, potentially maladaptive course of change – or, indeed, the commitment of resources by the enabling environment to help to realise the kinds of material changes in their communities that Indigenous peoples have long been seeking. This belies the construction of the possibility of transformative change on the basis of the political rationalities that have seen human agency and the enabling environment incorporated into the discourse of adaptive capacity, as discussed in this and the previous chapters. Instead, in the context of a growing discourse of climate change as crisis, the imperative of the survival of the social-ecological system appears to increasingly eclipse all other considerations. In the governmentality of Indigenous adaptive capacity, survival is a task for which the

adaptive Indigenous subject is constructed as being well equipped and, as I argue in the following chapter, is expected to play its part.

## Chapter 8: The pragmatic holism of adaptive capacity

The discourse of adaptive capacity is fundamentally shaped, I argue, by the 'pragmatic holism' inscribed in the discursive framework of the social-ecological system. This is the logic which saw systems ecologists overcome the problematic posed by a tension between mechanism and vitalism by 'encompassing formerly conflicting elements together within a new entity, the *system*, which functioned according to a more fundamental set of principles' (Bryant 2009: 269; emphasis in original). It is a logic that acknowledges, even celebrates, difference to the extent that it can be made sense of and positioned within the coherence offered by the sense of a larger whole to which the parts belong. This chapter examines the biopolitical effects of this pragmatic holism as the discourse of adaptive capacity invites the participation of diverse subjects and forms of knowledge and experience previously excluded from Western natural science, seeking to integrate and unify them in the shared task of climate change adaptation.

I describe how the broader discursive framework of the social-ecological system in which the discourse of adaptive capacity is grounded has become the basis of a participatory, integrative research and governance agenda in the context of climate change – as well as, more broadly, what is constructed as the Anthropocene. The modes of engagement with diverse actors and forms of knowledge – including those previously marginalised, such as indigenous peoples and their knowledges – emerging in this context represent, I argue, a particular political rationality. This rationality of what is required for governance is both progressive and pragmatic: it has responded to critique that has drawn attention to the harm done by previous singular ways of knowing and top-down ways of governing, but it also hopes to find through this integration of plural perspectives sustainable solutions to the challenges of this era. This governmentality enrolls the adaptive Indigenous subject in strategic engagement with Indigenous and



Western, traditional and modern knowledges and practices in the process of adaptive change, while it prescribes for government and other traditional structures of authority a facilitative, reflexive role. However, as I argue in this chapter, the participation of Indigenous and other subjects and the recognition and legitimacy afforded to their perspectives are ultimately circumscribed by the parameters of the discursive framework of the social-ecological system – the more fundamental, usually implicit, principles governing the system to which Bryant refers in the quote above.

In the first section I discuss the ways in which, on the basis of the pragmatic integrative logic of the social-ecological system, the governmentality of adaptive capacity proposes to mobilise and strategically integrate a plurality of knowledges and practices in order to overcome the blindspots and gaps perceived to limit the utility of any given single perspective. I then argue that the possibilities for the Indigenous adaptive subject to strategically engage with and bring together such plural perspectives through the processes of learning and dialogue explored in the previous chapters are constructed through a governmental mode of engagement that represents a revised ‘deficit model’ of science communication. The limits of what is legible and sensible within the underlying discursive framework of the social-ecological system constrain how the adaptive Indigenous subject can go on to engage in the task of adaptation, however. As I show in the third section, only those ways of knowing and acting in relation to climate change that are consistent – or can be reinterpreted as consistent – with this framework, and its imperative of the survival of the system, are recognised and admitted. The following section describes the requirements imposed upon the adaptive Indigenous subject through a call for unity that, in bringing and holding together diverse parts within a single whole, functions to discourage discord and dissent. I conclude by arguing that the discourse of adaptive capacity imposes ways of knowing and acting on climate change by naturalising the discursive framework of the social-ecological system as the only conceivable way of knowing and acting on climate change – and thereby presents as apolitical what is all the more political for this totalitarian move.

## 8.1 The integrative logic of the system

The discursive framework of the social-ecological system is shaped, as I have shown in the preceding chapters, by a series of shifts in the natural and social sciences in recent decades. An important thrust underlying many of the critical perspectives that have informed this discourse has been to seek to move away from modernist, Enlightenment and imperial paradigms to an understanding of knowledge as situated, socially produced, and in some sense relative (Hayles 1990). These critical perspectives have led to an interest in acknowledging and making room for diverse knowledges and voices, including those of indigenous peoples, that have been subordinated and excluded by Enlightenment and imperial paradigms. This is seen to involve dismantling false and harmful binaries now understood to have been constructed and imposed by these dominant paradigms, such as the dualisms of the social and the natural, the modern and the traditional, that have in many ways worked to preclude recognition of those previously marginalised knowledges and perspectives.

Below I describe how a pragmatic integrative logic evident in the discourse of adaptive capacity and the research agendas of Earth system science and governance seeks to incorporate into a single framework a diversity of knowledges and perspectives previously considered incommensurable. This integrative logic represents a political rationality that calls for a 'science inclusive of values and responsibility' (Horlings 2015: 163), one which engages with alternative types of knowledge and exercises reflexivity with respect to the effects of research itself (Fischer et al. 2015). The pursuit of such an integrative agenda would seem to be informed in part by the critical insights described previously but also, as I show, by a pragmatism that sees such an integrative approach – which reflects the holism of the concept of the system – as necessary to survive the threat of climate change.

### *Seeking 'useable' knowledge*

This pragmatic integrative logic is at the core of the discourse of adaptive capacity, which sees itself as bringing the contextual vulnerability approach in climate change research derived from political-economic and other lines of social scientific critique, together with the study of the resilience of social-ecological

systems, as I described in Chapter 3. It is reasoned that ‘the two approaches are potentially complementary, in the sense that actor-based analyses look at the processes of negotiation, decision-making, and action, whereas systems-based analyses complement this approach by examining the interaction of social and ecological processes’ (Miller et al. 2012). It is thought that together these perspectives might offer a fuller and better understanding of vulnerability and of the possibilities for response. Nathan Engle has argued that, as a ‘conceptual bridge’, the concept of adaptive capacity ‘allow[s] for a more thorough consideration of critical system components and practical implementation and application’ (2011: 648). I describe in this dissertation some of the ways in which the tenuous reconciliation achieved by the discourse of adaptive capacity finds expression in the ‘practical implementation and application’ of this governmentality in the context of Indigenous Australia, and with what effects. While there is some acknowledgement in the climate change literature that integrating different interpretations of vulnerability, for example, is not simply a matter of building a ‘shared language’ (O’Brien et al. 2007), the possibility that different approaches may hold fundamentally irreconcilable assumptions and commitments tends to be passed over in this discourse.

This logic holds that the complexity and urgency of the challenges posed by non-linear climate change necessitate a broader perspective (Soares et al. 2012) and research to be undertaken in ‘a holistic manner’ (Adger 2006: 272). In light of this perceived urgency, it is argued that ‘we no longer have the luxury of pursuing purely curiosity-driven conceptual advances in the study of common problems along parallel tracks [...] researchers have the responsibility to share experiences and insights on a core set of common conceptual and methodological principles’ (Miller et al. 2012: 11). This more holistic approach would exclude, then, those ‘purely curiosity-driven’ research efforts, and include only those that practically work towards ensuring the survival of the system. This sense of urgency in the face of what is constructed as environmental emergency has long underpinned a reasoning that historical research constitutes a dangerous delay and an ‘abandonment’ of commitment to respond (Enzensberger 1973). The Australian National Disaster Resilience Strategy, for example, makes the case for ‘aligning research outcomes with policy needs’ (C38/COAG 2011: 12) in order to direct

efforts towards achieving results most efficiently at a time when there is absolutely no time to lose. This sense of the need for pragmatism in the face of climate crisis is a powerful element of the discourse of adaptive capacity, as I discuss below.

The pragmatism of this logic would seem to reflect in some respects the argument made by STS scholars that science, like all other forms of knowledge, must be understood ultimately in terms of what it *does*, and allows people to do; in other words, that it ought not be reified as a mirror on the world but rather recognised as something that in the end *does* something in the world (Pestre 2004). The good that a knowledge might do in the world is contextual, for all knowledge is local and ‘knowledge that is useful – and used – is knowledge that emerges within a particular social and institutional context’ (Sarewitz 2010: 29). This line of argument is based on the critique that scientific knowledge, while ‘situated’ like all other knowledges, through its assumption of objectivity takes up a ‘view from nowhere’ (Nagel 1986) and plays what Donna Haraway terms ‘the god trick’ (1996: 581). This critique of the way that scientism ‘puts one type of human understanding in charge of the universe and what can be said about it’ (Nagel 1986: 9) has driven calls to democratise and ‘provincialise’ European knowledge (Chakrabarty 1990), which in turn appear to be reflected in the ideas of knowledge pluralism and participation that have come to feature in discourses of climate change adaptation. I argue below that, however, in creating a discursive space for the integration of plural knowledges, the epistemological framework of Earth system thinking in fact reassumes just such a ‘view from nowhere’.

With faith in a single ‘true’ scientific account of the world undermined in recent decades, it is argued from a pragmatic point of view that ‘modern problems cannot be consistently solved with singular, mechanistic, science-centred solutions’ (Bohensky and Maru 2011: 7). This pragmatic approach looks to ‘*robust decision-relevant climate science*’ (Sippel et al. 2015: 225; emphasis added; Dessai et al. 2009). The Earth system governance framework is described as seeking to ‘discover [...] the contours of applicable, practical, or *useable* knowledge (or, in light of the diversity of claims in these contexts, of knowledges in the plural)’ (Boardman 2010: 12; emphasis in original), for example. With reference to the adaptive systems literature it is argued in the Australian corpus that this

pragmatic epistemological plurality is therefore ‘less about producing high quality specialised knowledge that can be used to solve a “problem”, and more about bringing different knowledge systems and people together to improve a complex situation’ (C63/Nurse-Bray et al. 2013: 93) through ‘workable solutions’ (C46/Petheram et al. 2013: 49). With the *process* of participation constructed as being of significant value in itself, the main criterion of the value of such exchanges of knowledge is less the truth, and more and more something like *importance* or *usefulness*. A plural, ‘polycentric’ approach involves asking ‘how may this or that knowledge practice be brought into the service of human well-being?’ (Maffie 2009: 53). I argue below that the criteria upon which such an assessment is to be made tend, despite the democratic terms in which this discourse appears, to continue to be defined by the discursive framework of the social-ecological system – with survival featuring as the primary criterion.

Based on this pragmatic integrative logic, the governmentality of adaptive capacity thus calls upon all actors engaged in producing and using knowledge to work together to combine their efforts to greatest effect. It is argued that in Australia ‘all public institutions that relate to disaster resilience and climate change, including planners, climate scientists, decision-makers, regulators and emergency managers, must find structural and policy mechanisms to integrate their knowledge and efforts towards risk reduction and adaptation’ (C53/Bird et al. 2013: 210). An integrative analysis of vulnerability and adaptation options, for example, is seen to involve a range of stakeholders to ensure that the ‘breadth of expertise and opinions needed’ are included in the assessment to avoid maladaptation and optimise efficiency (LGASA 2012). This exchange of knowledge and viewpoints is achieved in the dialogic exchange of communities and actors within the wider enabling environment that I described in the previous chapter. In this exchange, ‘flexibility to enable the negotiation of differing value systems is [...] crucial’ (C66/Tran et al. 2013: 36), reflecting the concern to ensure a flexible and open process of climate change adaptation that I discussed in the previous chapters. Assumed in this discourse, however, is that such ‘differing value systems’ can be successfully negotiated to facilitate work towards common ends that are greater than any differences in values, as I discuss below.

### *The reintegration of the disciplines*

This pragmatic integrative logic is part of the broader research agendas of Earth system science and governance that have seen the coordinated mobilisation of a wide range of disciplinary perspectives to devise better responses to the challenges of climate change. As outlined in Chapter 3, research programmes dedicated to the ‘human dimensions of climate change’ were established on the premise that ‘the challenge of understanding a human-dominated planet further requires that the human dimensions of global change – the social, economic, cultural, and other drivers of human actions – be included within our analyses’ (Vitousek et al. 1997: 499). This interest in a fuller understanding of environmental change saw early climate impact assessments increasingly complemented by more interdisciplinary vulnerability assessments (Füssel and Klein 2006) including those that are designed to integrate insights on the social, political and cultural aspects of climate change, from disciplines such as psychology, anthropology, sociology, and ethics, into the picture of the biophysical aspects already sketched by the disciplines of physics, chemistry and biology.

It is argued by theorists of the social-ecological system that the integration of different disciplinary perspectives is in fact a *reintegration* of what should never have been separated. A volume edited by influential theorists of social-ecological systems Lance H. Gunderson and C.S. Holling (2002) concludes by citing Daily and Ehrlich – ‘in the beginning, there was the universe; from the Middle Ages on, there have been academic disciplines to study it’ (1999: 277) – to state that ‘we attempt to go back to the beginning and discover a more holistic approach’ (Yorque et al. 2002: 421). This imaginary of a world of knowledge before the disciplines has a long history in ecology, which has always seen itself as a science of integration. A group of biologists contributing to the journal *Bios* in National Socialist Germany in the 1930s, for example – among them von Bertalanffy, who distinguished the ‘pragmatism’ of systems ecology from the ‘philosophical’ holism of the organicist school – argued that ‘with the help of ecology [...] the progressive fragmentation of the sciences could be brought to a halt’ and envisaged a role for ecology ‘as a binding and synthesizing force’ (Keulartz 1995: 136). Their vision for ecology, which placed this integrative logic in the service of the National Socialist

political programme, would be discredited and become for a time muted on both sides of the Atlantic.

A vision of the reintegration, with the aid of an ecological systems framework, of fragmented disciplinary perspectives is resurfacing in the context of climate change, however. The rationale for the attempt to bring together the contextual vulnerability and resilience approaches that form the discourse of adaptive capacity, for example, is that ‘a number of fundamental linkages and complementarities exist between [them], but that they have been kept *artificially separate* by conceptual constructs, scientific traditions, and lack of interaction between the two academic communities involved’ (Miller et al. 2010: 11; emphasis added). Feola argues that the ‘loose’ concepts like transformation that appear in the discourse of adaptive capacity can create ‘much needed common ground for scholars from different disciplines’, allowing a variety of overlapping interpretations to meet (Feola 2015: 377). The biopolitics of adaptive capacity, taking as its field of intervention a system neither exclusively social nor environmental, construes such ‘common ground’ as an essential starting point from which to devise effective adaptive response in the face of pervasive and urgent climate change impacts.

#### *Recognising Indigenous scientists*

The Earth system science and governance research agendas have sought to include not only those disciplines but also other forms of knowledge and voices. A new ‘sustainability science’ (Kates et al. 2001) was proposed around the turn of the millennium that would employ participatory methods to ‘connect [...] estranged scientific enterprise with lay experiences and practical knowledge’ on the grounds that only a more integrated approach would allow us to make sense of our global predicament (Löwbrand et al. 2009: 11). There have since been renewed calls for a ‘new science’ on climate change to ‘coordinate and synthesise research and insights from the many actors across the world who are concerned with these issues’ (O’Brien et al. 2010: 217). This integrative logic thus purports to accommodate a ‘proliferation of authority forms’ in order to strategically ‘fill a perceived research and management gap’ (Salleh 2015: 433), but tends to do so by invoking the terms of the critical call to ‘challenge dominant Western

ideological and methodological hegemony and promote integration of diverse views' (O'Brien et al. 2010: 217). In his advocacy for an Earth system perspective Clive Hamilton claims, for example, that 'one cannot accuse [...] Earth system science' of either the 'imperialism' or 'absolutism' of Enlightenment science (2017: 84).

One element of this research agenda is concerned with the integration of indigenous and non-indigenous knowledges. This is often articulated in terms of the importance of dismantling the dualistic terms in which the relationship between the two has historically been cast (e.g. Pretty 2011), acknowledging indigenous peoples as scientists in their own right and fundamentally not different from Western scientists. It is argued in the literature that indigenous knowledges, insofar as they are 'gathered through methods that are empirical, experimental and systematic', must themselves be acknowledged as 'essentially scientific' (Klubnikin et al. 2000: 1304). The Indigenous Advisory Committee to the Australian federal government states in its National Caring for Country Strategy that its 'long term aim [...] is to expand the acknowledgement of Indigenous knowledge systems as a form of science and the appropriate integration of this knowledge within various western-based scientific methodologies' (C47/IAC 2012: 17). An Aboriginal participant in a NCCARF project extended this argument to represent non-indigenous people as mere newcomers to the scientific study of the natural world: '*Scientists working on [climate change], right now [...] but [...] our] people been scientists for a long, long time*' (C53/Bird et al. 2013: 123; emphasis in original). The integrative logic of Earth system science has thus allowed Australian Indigenous peoples to be positioned and to position themselves as participating in a common scientific enterprise, with indigenous knowledge no less important than any other form of scientific data.

This recognition of indigenous knowledges is also informed by critical perspectives that have challenged the representation of indigenous peoples, cultures and knowledges as pure and unchanging. Reflecting the discourse of hybridity that I examined in Chapter 6, it is observed that 'these local [Indigenous] knowledge systems partly comprise western knowledge systems as well', for people live in 'blended worlds, where different knowledge systems become intertwined' (C64/Petheram et al. 2013: 43). It is argued that, like indigenous peoples in other



parts of the world, Aboriginal and Torres Strait Islander peoples have shown themselves to be very adept at negotiating these 'blended worlds', as is stressed in the NCCARF report by Tran et al. (C66/2013) and various documents by Indigenous organisations (e.g. C21/Dhimurru 2008; C51/Yununijarra 2012). For example,

'rangers have to look after country both ways. The traditional way as our grand-parents told us and the western way. Our Rangers need our traditional knowledge to know when to look for certain animals in country and to find their way around country. The Rangers need the western knowledge when they do fire management, surveys for animals, when they are eradicating weeds or when they are going to forums, meetings and conferences' (C33/Balanggarra and KLC 2011: 35).

In this sense Indigenous peoples are themselves represented as setting an example of the kind of pragmatic integrative approach required for survival in a changing climate, and, as I discuss further in the following section, the construction of the Indigenous engagement in such an approach is a central element of the governmentality of Indigenous adaptive capacity. In the face of the challenges of climate change, differences between knowledges, cultures and ways of life can appear smaller impediments than they might once have been seen. For example, Petheram and colleagues observe from their research on Goulburn Island that 'despite western concepts of climate change being mainly foreign to them, basic concepts were picked up relatively easily by participants and integrated with local knowledge systems and observations which did not seem overly incompatible with climate change explanations given' (2013: 42). 'Many of these respondents are in fact bicultural, reasonably educated, and very able to shift frames of reference in discussion of [climate change]' (C60/Memmott et al. 2013: 22). These observations inform the construction of the Indigenous capacity to strategically engage with different knowledges and practices that I discussed in Chapter 6.

In constructions of the integration of Indigenous and non-indigenous knowledges, the metaphor of a 'tool box' is frequently evoked, such as in the calls for 'two-

way' exchange that I introduced in Chapter 4. This image is employed to suggest that integration expands the number and diversity of tools at hand to tackle the challenges of climate change, providing 'collaborative, cross-cultural "two toolkit" approaches' (Russell-Smith et al. 2009: 28). The West Arnhem Land Fire Abatement programme, for example, is characterised as 'bringing two tool boxes together' (C61/NAIEF 2013a: 22). This is 'a duality of rangeland environmental knowledge that provides added value to both Indigenous and scientific traditions of how the rangelands are known' (C17/URS 2007: 9) – implying that each knowledge is enhanced in its partnership with the other.

The construction of Indigenous knowledge is also considered to exemplify integration in another sense that I discussed in Chapter 5: that of the holism of Indigenous cosmologies. Refusing the distinctions between the social and natural realms that feature in Western worldviews, these cosmologies are interpreted as views of the world that are always already integrated. As I argue in the present chapter, there are points when these cosmologies represent a challenge to the commitments and assumptions of the scientific paradigms within which climate change research is undertaken – points when Indigenous cosmologies do not lend themselves to being used as tool boxes from which helpful tools can be selected. These points reveal that the pragmatic integration of diverse knowledges that I have described here is expected to occur in ways consistent with an implicit underlying epistemological framework defined by the discourse of the social-ecological system. I explore the terms of the recognition that are thus imposed on Indigenous knowledges in the third section. I next argue that, despite the discourses of agency and plurality, the pragmatic engagement of the adaptive Indigenous subject in diverse knowledges and practices is governed to prescribe and enforce particular ways of participating in the task of adaptation – reflecting a revised form of traditional forms of science communication that sought to address a perceived 'deficit' of scientific knowledge among lay publics.

## **8.2 Addressing the capacity deficit**

Reflecting the pragmatic integrative logic described above, the task of the adaptive Indigenous subject is constructed as one that involves actively engaging with a plurality of knowledges, practices and values, as I have argued in previous

chapters. In emphasising the agency of the Indigenous subject in this task, the discourse of adaptive capacity can be seen to respond to the way that Indigenous peoples have historically been cast as objects and not subjects of knowledge, as outlined in Chapter 4. The NCCARF report by Bird et al. asserts that by recognising the value of Indigenous knowledges, Indigenous people can be repositioned as agents building knowledge about and for their own communities, rather than as objects of research (C53/2013). This idea of research ‘by First Nations people for First Nations people’ reflects the position articulated by Yorta Yorta and other First Nations elders involved in the NCCARF research by Griggs et al. that ‘while they were quite happy to take information and advice from non-First Nations participants it was clear that the ownership and responsibility must lie with the First Nations community’ (C55/2013a: 39).

In this discourse, this agency is constructed more specifically as one that involves a capacity to engage in the task of adaptation in a particular kind of way to achieve the pragmatic ‘workable solutions’ mentioned above. This is what Petheram et al. describe as an ‘inclusive and flexible approach’ that involves ‘local people, researchers and scientists’ all engaged in ‘developing ideas for testing in the field (C64/2013: 49). It consists, in other words, in both the experimental approach to engaging with the new described in Chapter 6 and the dialogic engagement and exchange of different perspectives discussed in Chapter 7. This is an approach in which, as I have argued in these chapters, the *process* of engagement with adaptive options constitutes adaptation more than does the implementation of any particular adaptive option. This pragmatic approach is also one in which the adaptive Indigenous subject is constructed as exercising an agency to strategically engage with knowledges, adopting and abandoning them at will. This capacity to engage reflexively with knowledge in the way captured in the theory of triple loop learning is central to adaptive capacity, which positions adaptive agents as able to adopt and discard ‘values, beliefs, and worldviews’. The process of building and sharing knowledge through dialogue described in Chapter 7 also depends on and involves the cultivation of this sense of agency.

Indigenous adaptive capacity includes, it is argued, a ‘capacity for combining aspects of traditional approaches and western science’ (C15/L&WA 2007: 29) to achieve the integration described above. The discourse positions Indigenous

peoples as able to draw on their unique position within a ‘blended world’ and their familiarity with Indigenous knowledges and with scientific knowledges to evaluate and strategically deploy either or both. The alternative to science represented by Indigenous knowledge is seen to offer a strategic point of contrast from which Indigenous peoples can evaluate science. It is argued that integrative research ‘partnerships can transfer knowledge and enrich local understanding of climate change risks and assist Aboriginal people to *critically evaluate scientific predictions in their own languages and cultural terms* and test adaptive capacity at a community level’ (C58/Leonard et al. 2013: 1; emphasis added). Based on the ‘recognition that the concerns, standpoints, needs and knowledge of all involved are legitimate’ (C56/Griggs et al. 2013b: 7), Indigenous peoples can then choose to strategically take advantage of other knowledges, scientific or non-scientific: ‘it’s not as if one has the monopoly on truth – because everything is there and we have to look at all those different combinations’ (C27/Galloway McLean 2009: 39). The implications is therefore that Indigenous peoples might actively choose whether or not to ‘take information and advice from non-First Nations participants’ (C55/Griggs et al. 2013a: 39). With this construction of Indigenous adaptive capacity, the adaptive Indigenous subject is called upon to engage with knowledge, exercising what appears to be a freedom to negotiate plural knowledges.

The construction of Indigenous adaptive capacity also attends to how people *use* knowledge, representing an extension of the scope of the integrative agendas of adaptation research and governance beyond just knowledge to practice and skills, and reflecting the pragmatic interest in the useability of knowledge described above. Apparently advocating a move beyond the deficit model of science communication, it is argued in the NCCARF report by Horne et al. that ‘*current constraints in adaptive capacity are “capacity” based, rather than being “education or knowledge-gap” related*’ (C57/2013: 40; emphasis added). This means that,

‘While education programs, such as those around the introduction of air conditioning, are important in building community capacity through expanding practical knowledge, such programs in the future should move explicitly “beyond behaviour change” and take

appropriate account of (a) practice elements (material, rules, common understandings and practical knowledge) and (b) dynamic relations between practices' (46).

It is similarly argued in a report by the Productivity Commission that what really needs to be addressed in adaptation governance is the capacity of Australians to *use* knowledge: 'Even if information is produced, coordinated and shared appropriately, individuals may not necessarily use information in ways that support effective adaptation. This could be due to capacity constraints (a lack of skills or resources) or cognitive constraints' (C50/2012: 137). These arguments represent a recognition, reflecting the critical insights described above, that knowledge is encountered and applied in situated contexts, without any one universal meaning, and that other factors in these contexts shape its meaning.

These constructions of the engagement of the adaptive Indigenous subjects with knowledge would, in responding to some of those insights above, thus seem to represent an important move beyond the 'deficit model' of science communication in two senses. The first is that Indigenous peoples are no longer cast as *deficient* objects of intervention. In other words, one foundational assumption of the deficit model – that there is a *deficit* on the part of recipients of science – would appear to have been dismissed with the idea that people have different forms of knowledge that are legitimate – that can indeed even be classed 'scientific', and should be shared along with science – in line with a recognition of the value of Indigenous knowledges. The second is that the other foundational assumption of the deficit model – that the deficit is in *knowledge* – would also seem to have been reformed with the appreciation that knowledge is not separable from values, practices and other elements of the specific contexts in which it is used.

With the recognition that the dissemination of knowledge does not automatically produce desired results, the focus of science communication efforts has shifted to leveraging the values that underlie engagement with the issue of climate change, reflecting the apparently progressive 'cultural turn' in climate change research. Employing the 'values-based' approach, the discourse of adaptive capacity has seen engagement with vulnerable communities conscientiously take into account

the contexts in which people engage with knowledge and the various social and political reasons people engage with knowledge in particular ways. This has allowed communication efforts to be tailored to particular communities, offering climate change communicators ‘greater leverage’ (Wolf and Moser 2011: 550) through ‘culturally resonant framings and [...] regional “hooks” that are of interest and meaning only to the regional population’, for example (549). I argue that such ‘values-based’ approaches to climate change communication represent a revision of the deficit model, with the objective – in this case to obtain a particular adaptive response envisaged by communicators – remaining the same.

With these revisions, the agency of the adaptive subject to engage with the knowledges has become the target of intervention. In this sense this model might be said to target a *capacity*, rather than a knowledge, deficit. It applies a wide battery of techniques to monitor capacity to effectively engage with the task of climate change adaptation and to target its various dimensions, from practices to relations to attitudes (including attitudes to the self, to others, to the task at hand). This constitutes a crucial dimension of the governmentality of adaptive capacity, for the whole programme of adaptation through building adaptive capacity hinges on the participation of the adaptive agent. In particular it reflects a political rationality that, addressing the pitfalls of past approaches to science communication, posits the active engagement and a sense of efficacy on the part of the subject as essential to effective adaptation.

The capacity of the Indigenous subject is governed in terms of the unique position and properties that are ascribed to it in the ways that I have described in the preceding chapters. The governance of the Indigenous subject includes, for example, nurturing the capacity to negotiate hybrid worlds, as I have discussed in Chapter 6. It also acknowledges the barriers to the realisation of this capacity by facilitating participation, seeking to address a lack of self-efficacy and trust, as described in Chapter 7. The participatory approach employed in the discourse of adaptive capacity acts on its targets indirectly, appealing to existing community values and aspirations in order to leverage the agency of the adaptive Indigenous subject. In one NCCARF report it is recalled that,

‘Initially people talked about adaptation responses being the Government’s responsibility, but after learning that climate change was occurring everywhere, and that there were options for the community to be involved in decision making and action, the participants became inspired about the types of community action that could be taken’ (C64/Petheram et al. 2013: 36).

In other words, like the deficit model employed in the past to ensure behavioural change or to quell public contestation about scientific issues, communication efforts in the adaptation context remain in the service of obtaining a particular kind of response on the part of the public: to ensure people engage in adaptation and build their adaptive capacity by taking up the roles required of them within the social-ecological system. How it differs is that the discourse of adaptive capacity does not just provide knowledge but a way of engaging with knowledge. The implied deficit is now the lack of the right kind of engagement on the part of the adaptive Indigenous agent. The target of the education programmes to which Horne et al. (C57/2013) refer has changed in the discourse of adaptive capacity, but their centrality to the governance of climate change adaptation has not.

### **8.3 The limits of integration**

In this section I argue that the discourse of adaptive capacity, which maintains the primacy of the system as a whole over all else, establishes limits on the agency described above to choose the course of adaptive change. This is evident in the ways that alternative knowledges and worldviews are recognised only insofar as they can be incorporated into an implicit epistemological framework constituted by the dominant understanding of the social-ecological system. Ways of knowing and engaging with the task of climate change that pose a challenge to its assumptions and commitments are not recognised or are reinterpreted to fit in this framework. Where these alternative perspectives are perceived to undermine the foundational objective of the survival of the system, remedial communication is undertaken to ensure adaptive response – revealing the limits to the autonomy of the adaptive Indigenous subject.

### *The terms of inclusion*

The discourse of integration, and its apparent openness to diverse, blended and useable perspectives and knowledges, is an important response to critique from within the social sciences of the early, singular technocratic constructions of climate change. However, my analysis shows that alternative knowledges can only supplement, not change or challenge, this dominant understanding. It bears out the argument by critical scholars that the recognition and inclusion of alternative knowledges in earlier pluralising and participatory moves has tended to remain limited or conditional (see e.g. Kothari and Cooke 2001 on participatory development and environmental governance, and e.g. Nadasdy 2005 on traditional ecological knowledges in particular). These critics observe that the integration of non-scientific knowledges amounts to taking pieces of 'situated', 'holistic' and 'processual' traditional knowledge and understanding and implementing them based on notions of knowledge as standardised, universal, compartmental and instrumental (Martello 2001; Turnbull 1997). Indigenous knowledges are not taken on their own terms as an equal counterpart, but are mined for 'extended facts' that supplement western knowledge (Eden 1996). Due to the requirement that indigenous knowledges be 'useful' for a predefined purpose, those aspects of indigenous peoples' experiences that might 'present an alternative to the official discourse are distilled out as useless or irrelevant' (Nadasdy 2005: 224). Indigenous knowledges often continue to be treated, in other words, as essentially dispensable.

The way that some elements of Indigenous knowledges get filtered out as dispensable in the context of Indigenous adaptation in Australia is most visible at the points at which these knowledges pose what is perhaps their starkest challenge to the dominant scientific discourses of climate change: an alternative understanding of the causation of climate change. 'In the Aboriginal explanation [for climate change], the country was shaped by people; in the Western one, by nature' (Memmott and Long 2002: 43). Therefore, like indigenous peoples elsewhere in the world, some Australian Indigenous peoples have attributed climate change to spiritual retribution for environmental mismanagement. The Miriwoong people of the Kimberley believe, for example, that climate change is ancestral punishment for 'disrespectful treatment' of the sentient environment,



including through ‘mining, pastoralism, irrigated agriculture, and the damming of the Ord River’ (Leonard et al. 2013: 630). They believe that ‘someone must have “sung them” [the changes] and “they have not sung it back to the right way”’ (C58/Leonard et al. 2013: 79). Anthropologist Julie Cruikshank has observed in a similar case elsewhere in the world that ‘on Peru’s Cordillera Blanca, *campesiones* take scientists’ measuring devices [for measuring glacial retreat] because they believe those instruments are what are causing drought’ (Cruikshank 2005).

Other disruptions to the dominant scientific discourse take the form of the attribution to climate change of weather and climatic phenomena scientists consider to be unrelated (or at least maintain that a sound causal relation could not be established). Climate change has been used to explain everything from coastal erosion to solar eclipses by indigenous and lay non-indigenous people around the world alike (Rudiak-Gould 2012); most scientists, in contrast, would assert that only the former, and definitely not the latter, could be connected to climate change. According to most of the studies conducted in Indigenous communities that I analysed, Indigenous peoples across Australia, particularly those living in more rural or remote areas, have reported noticing ‘strange changes’ in the environments in which they live, including for example a ‘strange roaring in the water’ and ‘angrier cyclones’ (Petheram et al. 2010: 686). They often use the scientific concept of climate change, when they become aware of it, to explain such changes. The visibility of climate change is quite literal: in the words of a community member, ‘*they can see, they can tell how weather change, they can see flower changing*’ (C53/Bird et al. 2013: 123; emphasis in original). With ‘ecological hyperperceptiveness [...] now prominent on the list of celebrated indigenous traits’, indigenous peoples around the world and some of the scholars, activists and journalists who count themselves among their allies, have a stake in ‘outspoken[ly]’ making these connections (Rudiak-Gould 2013: 126). As described in Chapter 5, despite calls for plural, lay perspectives and the emphasis placed on listening to and collecting communities’ experiences and observations of climate change, many scientists and climate change communicators, remain dismissive of such lay attribution of any given observed phenomenon to climate change, arguing that all that can ever be stated with certainty is that climate change is increasing the *likelihood* of an extreme weather event or other local phenomena.

These alternative understandings of climate change pose a challenge to science in the sense that they are encountered by (or are deliberately presented to) researchers as an obstacle to the successful dissemination of scientific information about climate change. Researchers and communicators are forced to respond, and generally do so first by acknowledging these understandings – and here it is recommended that ‘rather than seeing such interpretations as illogical or uninformed, it is necessary to acknowledge their legitimacy’ (Granderson 2014: 59) – before actively pushing aside, supplanting or countering them (and in the case of the Cordillera Blanca, also reclaiming equipment). They may be reinterpreted or translated into terms more palatable or comfortable for a non-indigenous audience with the following kinds of explanations: ‘It is not that poor behaviour is simplistically understood to cause damaging cyclones, but rather that *maintaining responsible social and environmental relations is integral to maintaining a capacity to respond* to cyclones when they occur’ (Veland et al. 2010: 203; emphasis added). With the idea that good social-ecological relations underpin response capacity, the Indigenous attribution of cyclones to spiritual retribution is in this case re-interpreted to align with the discourse of the social-ecological system, and is taken to consolidate rather than challenge this discursive framework. This effectively neutralises the threat that a fundamentally different worldview is seen to pose to the project of climate change adaptation, and even strategically redeploys the threatening worldview in aid of this project.

Thus it remains the case that Indigenous knowledge may be merely taken into account in climate change adaptation initiatives. In Australia, Indigenous peoples have pointed out that ‘we’re being seen as a source of information about ability to adapt and so forth but we’re not actually seen as an authority on the management [of adaptation]’ (C27/Galloway McLean 2009: 37). One NCCARF report concedes that ‘Indigenous modes of decision making are rarely assessed on their own terms and are often compared to or understood in relation to what is considered to be “effective” modes of adaptation’ (C66/Tran et al. 2013: 36). This reflects the argument by STS scholars that the inclusion of developing countries in global climate modelling projects ‘imposes an epistemic hegemony that renders alternative “ways of knowing” the climate either subordinate to or dependent upon the epistemic community’ located for the most in the developed world

(Mahony and Hulme 2012: 197). What can be seen in the efforts to integrate diverse knowledges described in this section are the limits to the recognition of those aspects of Indigenous perspectives that cannot be reconciled with the epistemological framework in which this integration is pursued, and ushered inside as 'extended facts'.

### *The imperative of survival*

The analysis set out above suggests that there are limits to the ways in which Indigenous peoples can engage in the task of adaptation. I argue that, while the apparently pluralistic impulse of the discourse of adaptive capacity mobilises diverse knowledges and values, it does so within limits derived from the overarching discursive framework associated with systems ecological constructions of climate change and of possibilities for response. The contours of this framework, in other words, constitute the limits of what it is possible to do or think, as can be glimpsed in the following excerpt: 'a more *holistic* approach to community recovery allows, *within broad guidelines*, local communities to determine priorities for action' (C10/COAG 2002: 72; emphasis added). The conditions imposed on alternative modes of knowing and acting indicate that the parts of the system are expected to be ultimately congruent with the whole. With a totalising perspective that effectively understands the social, political, economic and institutional, all in the ecological terms of the living system, this discursive framework excludes those expressions of human agency that do not fit within these 'broad guidelines'.

These limits are most evident where communities hold different perspectives on the necessity of adaptation itself, as has been found by some vulnerability assessments in Australia and elsewhere. In such cases, as I show here, government and researchers may intervene to ensure that adaptation occurs. It is widely noted that Aboriginal and Torres Strait Islander peoples 'do not necessarily prioritise climate risks above others' (Leonard et al. 2013: 624). The NCCARF research plan by Bird et al. reports that in an outstation in the Northern Territory, 'the local Traditional Owner did not consider evacuating from the outstation an option', saying '*all the time, we live here. And it doesn't matter what, what storm is, you know, but we still stay here*' (C53/2013: 134; emphasis in original). Indigenous peoples might choose to opt out of adaptation initiatives because they

have a different conception of human agency in the environment – believing, for example, that country will care for them and prevent harm from climate change impacts. The people of the community of Waruwu in Arnhem Land have been reported as not perceiving themselves to be vulnerable to the impacts of climate change. The concern they expressed is rather about adaptation imposed upon them based on scientific assessments of their vulnerability. Experiencing a fear that must be among the cruellest of all the forms of epistemological violence that characterise the settler-colonial context, they asked climate change researchers, ‘Will the government just come and take us away?’ (Veland et al. 2013: 321). One community on the island of Warraber in the Torres Strait, frustrated that research frequently results in no action as discussed in Chapter 6, resisted further climate change research with ‘a public refusal to support additional climate change research on their island’ issued in 2010 by a Councillor and an Elder (O’Neill et al. 2012: 1107).

In all of the cases cited above, in which communities have attempted to resist or question the need for adaptation, it is reported that through engagement with climate change researchers they ultimately accept the need to plan for climate change (Veland et al. 2013; Petheram et al. 2010). At the beginning of their research project, Petheram et al. note that ‘no participants listed climate change as one of their most significant concerns [...] After discussions on climate change, participants were more concerned about the way it threatened their communities and country, and particularly future generations’ (2010: 686). Reflecting on this process, these and other researchers seem to suggest that initial divergence between community and scientist perspectives is illusory, and that they discovered through the research process that fundamentally the priorities of the two groups in fact align. For example, Leonard and colleagues conclude a paper about traditional knowledge in the Kimberley by noting that ‘our research demonstrates that in many instances Miriwoong people are worried about the same issues as scientists [...] but frame their concerns through their specific worldview’ (Leonard et al. 2013: 631). The stories of these research projects are recounted by researchers as the discovery that they share in common with communities fundamental priorities, reflecting a unity of purpose. My argument here should not be read as contesting that in many cases communities and

researchers may very well find common priorities and values. It is that such an emphasis on a unity of purpose and priority can imply that disunity and disagreement – ironically the very difference that the governmentality of adaptive capacity sets out to find room for and give expression to – is portrayed as something to be avoided at all costs.

The cases in which Australian Indigenous communities push against – and thereby expose – the limits of the self-determination permitted them in contemporary Australia, show that acceptance of the need to adapt is not optional. The sentiment in this discursive space is that ‘we need to make sure that Indigenous people all across the country have those conversations about climate change’ (C01/Auty, n.d.: n.p.). In other words, the communities that are gently encouraged through participatory community workshops to consider adapting to climate change ultimately accept the need to do so because they have no choice but to. Although it is argued that ‘it is important to recognise that community has the right to not participate in adaptation planning and management if they have other priorities’, in cases in which communities are unwilling to engage in adaptation, it appears that alternative strategies are employed to get around the problem. One NCCARF report suggests that ‘in this case, adaptation planning may be better incorporated into existing programs and networks, such as measures for disaster management, natural resource management, public health and education programs’ (C58/Leonard et al. 2013: 48), which raises the question of how meaningful this right not to participate is. Despite the wishes of the Northern Territory outstation community mentioned above, for example, ‘local officials based in Maningrida have the power to call for an evacuation of the outstations if a large event is predicted to impact the region’ (C53/Bird et al. 2013: 134). This lack of authority suggests that the role of Indigenous people in making decisions remains provisional, the discourses of participation and self-determination notwithstanding.

The options for adaptation action tend to be presented in the discourse of adaptive capacity in ways that similarly limit the possibility for Indigenous peoples to question and contest them. The notion of the ‘trade-off’ features prominently in the discourse of adaptive capacity, in which it is stressed that an expanded view of the temporal and spatial scales of the social-ecological system necessitates

consideration of the trade-offs between positive and negative effects of adaptive measures across these scales. I suggest that the language in which the duality of costs and benefits is invoked casts as inevitable and non-negotiable the options presented. It excludes altogether the options *not presented*, which consist in the more implicit, but no less contingent, decisions that have contributed to any given configuration of social life. A trade-off described as facing residents of some remote Aboriginal communities in the Alinytjara Wilurara lands of South Australia, for example, is that of whether to live on their homelands (i.e. on outstations), which would hold some advantages for community well-being, or to live in larger townships with greater access to services, which would for instance enable children to attend school while living at home (C41/AWNRMB 2012). Here, the two possibilities presented preclude consideration of, say, alternative models of service delivery that might allow schooling options on outstations and not only in townships. The intention of this argument is not at all to downplay that there are genuine and difficult decisions to be made by communities and policy-makers; it is to underline that the way that these decisions are described in the language of the trade-off already limits the options that are available for negotiation – despite the discourse of open plurality and participation.

In the discourse of the social-ecological system the scope of politics is ultimately dictated by the imperative of the survival of the system. As I argued in Chapter 7, this imperative eclipses all other considerations – even though the promise of human agency at the heart of the discourse of adaptive capacity would appear to introduce the possibility of choice, including choice about when *merely surviving* may not be worth it, for example. In pursuit of the object of survival, Sheila Jasanoff notes, modern biopolitics has a ‘tendency to simplify in order to aggregate, to a point where the essential meanings and purposes of human existence are deleted’ (2010: 239). She cites a contribution to a hearing of the 1987 Brundtland Commission from a Brazilian participant:

‘You talk very little about life, you talk too much about survival. It is very important to remember that when the possibilities for life are over, the possibilities for survival start. And there are peoples here in Brazil, especially in the Amazon region, who still live, and

*these peoples that still live don't want to reach down to the level of survival'* (2010: 239; emphasis added).

This imperative of survival is taken to justify the instances in which Indigenous communities are denied the autonomy to choose not to engage in adaptation to facilitate their own survival and that of the wider system. I argue in the following section that this imperative underpins a powerful discourse of unity, and show how this discourse has the effect of containing politics in the context of climate change adaptation.

#### **8.4 Unity through diversity**

The integrative, holistic logic of the concept of the social-ecological system is associated with a powerful discourse of unity that can be seen running through constructions of Indigenous adaptive capacity. Resembling the vision of 'unity through diversity' articulated by Jan Smuts at the turn of the last century, which he expected would be facilitated by the new integrative discipline of ecology (Anker 2001), this is a discourse that can be seen to be once again acquiring traction based on the logic that survival in the context of climate change is possible only through such unity of purpose within the social-ecological system.

As I have described previously, the scale of the challenges posed by climate change are seen to necessitate the collaborative participation of all actors. It is argued in the Australian National Disaster Resilience Strategy, for example, that 'a disaster resilient community is one that works together to understand and manage the risks that it confronts [...] If all these sectors *work together with a united focus and a shared sense of responsibility* to improve disaster resilience, they will be far more effective than the individual efforts of any one sector' (C38/COAG 2011: iv; emphasis added) – evoking disaster resilience as a common goal expected to be achieved as an *emergent* function of this 'united focus'. A NCCARF report similarly argues that 'appropriate outcomes from projects' in Aboriginal and Torres Strait Islander communities 'can be assured by being informed and empowered participants [...] and developing connections with other communities to support knowledge sharing around climate change and the development of a *unified voice*' (C56/Griggs et al. 2013b: 7; emphasis added).

Working together towards a common goal in a diverse context is seen to depend on efforts to find a common language or common ground: the ‘encounters of mutual enrichment’ (C56/Griggs et al. 2013b: 7) sought in the process of dialogic engagement described in the previous chapter are expected to bring together all parties to ‘develop an understanding of how each party works, recognise *common ground and differences*, develop a shared vernacular, and negotiate common principles for further interactions’ (C56/Griggs et al. 2013b: 7; emphasis added). This adaptive capacity manifests in unified action, which Nursey-Bray et al. refer to as a ‘strength’ of the Arabana people that was demonstrated when Arabana people from around the country ‘*collectively agreed* on an adaptation program’ (C63/Nursey-Bray et al. 2013: 2; emphasis added), as cited previously. The emphasis in this discourse on what is *shared* reflects the idea that system function consists in the smooth interaction of its parts, which as I have argued previously underpins the construction of Indigenous adaptive capacity as a property that belongs to the collective.

There is a sense in this discourse that Indigenous communities must come together in pursuit of a common purpose greater than the differences that would otherwise divide them – greater even than the specific aspirations of any one community. Because cohesion – not only between parts of system but also within them – is paramount to system function, division, disagreement and dissent are to be avoided. A resident of Wujal Wujal community member quoted in a NCCARF report expressed her frustration with what are widely seen as the unnecessarily bureaucratic processes involved in the administration of remote communities: ‘*The planning is dividing us. I don't want to work in separation [...] We have to look at a holistic approach*’ (C53/Bird et al. 2013: 175; emphasis in original). The TSRA’s climate change adaptation strategy also calls for a sense of common purpose that requires more trivial concerns to be set aside: ‘Climate change will test our determination, ingenuity and capacity to work as one for a common purpose; there is too much at stake for us not to rise to the challenge’ (C69/TSRA 2014: i). Disunity can therefore be portrayed in this discourse as perverted and obstructionist.

Despite the critique of the reification of the local community as free of internal inequalities and power relations (Mohan and Stokke 2000) that I discussed in the



previous chapter, the discourse of unity in these ways reinstates the imaginary and demand for a harmonious community. This discourse ‘does not say whose will, interests, or preferences should be supported, except those of a generalized “we”’ (Hedrén 2014: 67). As discussed previously, the discourse of the social-ecological system takes the interests of all of the parts to be that of the whole. The goal of ‘multi-scale policy harmonization’ (Preston et al. 2015: 474) would seem to preclude the possibility that in fact different and contradictory policies might be required to address the needs and interests of different actors. The imperative of unity essential to the proper functioning of the system can therefore preclude initiatives that could, for example, be regarded as advancing redistributive justice from an alternative perspective, but that would be interpreted as undermining or disrupting the smooth functioning of the system on the basis of this pervasive systems discourse.

The notion that the parts are subordinate to the whole can and has been deployed to significant political effect. Through the efforts of the group of biologists associated with German journal *Bios* that I mentioned above, for example, this ecological idea bolstered a holistic political philosophy that ‘was expressly directed against liberal individualism which, with its emphasis on self-interest, was blamed for all the symptoms of disintegration that threatened to undermine social life [...] The message is clear: the individual must [...] make himself wholly subservient to the group or community of which he forms a part’ (Keulartz 1995: 138). This informed the National Socialist political programme in obvious ways. This history ought to give pause for reflection in the context of the redeployment of the discourse of the holism of the system in the context of climate change.

In the context of Indigenous adaptation, the discourse of unity valorises a cohesion within and among communities, as articulated in the excerpt above that ‘*the planning is dividing us*’ (C53/Bird et al. 2013: 175; emphasis in original), which positions political divisions as unhelpful at best and damaging at worst. This depiction of a unity within communities is aided by constructions of indigenous adaptive capacity as a property of the collective that arises from the functional relations within the system. The discourse of unity also underpins the construction of the role of Indigenous peoples as ‘eyes and ears’ on country in the

national interest, as described in the previous chapter, which is taken to represent the cohesion of the Indigenous part within the Australian whole. This draws on the articulation of Indigenous identity that features a uniquely sustainable relationship with the natural environment and a capacity to read and respond to the needs of country.

These constructions have the potential, I argue, to place Indigenous peoples in yet another double bind. Aboriginal and Torres Strait Islander peoples already face requirements of unity among communities that are associated with their collective identity. This presents them with what Baker et al. refer to as a 'difficult dilemma':

'should they try to suppress their internal diversity in the cause of presenting a united front that is more likely to gain them favourable reactions in the mainstream; or should they openly express the fundamental realities of that diversity, in the hope that non-indigenous mainstream administration will accept this and adjust its approach accordingly? Either approach raises problems' (Baker et al. 2001: 18).

More such difficult dilemmas are possible if the discourse of adaptive capacity continues to require communities to present a united front and to play their part in the national adaptation effort. This is perhaps particularly the case where opportunities to engage in caring for country may be effectively contingent on a willingness to serve as the nation's 'eyes and ears'.

## **8.5 Conclusion**

This chapter has examined the integrative logic underpinning the 'pragmatic holism' that, I have argued throughout this dissertation, characterises the discursive framework of the social-ecological system. This pragmatic integrative logic is evident in the analysis presented in the three preceding chapters, which looked at the construction of adaptive capacity as a property of the social and the ecological whole; of adaptation as the task of bringing together historical knowledge and experience with new ways of surviving environmental change; and of the roles of different parts of an integrated, nested social-ecological system in

this process. To theorise adaptation in these ways, the discourse of adaptive capacity has integrated insights from the social sciences in order to include an agency that can undertake transformative change, as well as to theorise the wider social and political context in which this agency is exercised. This chapter has focused on the explicit and widespread calls for integration – and the vision of finding a ‘common ground’ – in which this logic is articulated. These are calls for the integration of diverse knowledges, practices and values in order to find the ‘workable solutions’ seen to be required to face the impacts of climate change. As I have argued in this and the previous chapters, the logic of pragmatic holism has in these ways given rise to a governmentality that recognises the value of the experience that the adaptive Indigenous subject brings to this task, and leverages it in the process of adaptation.

My analysis has shown that the recognition and acceptance of diverse knowledges, practices and values remains conditional, however, on the terms of the discursive framework of the social-ecological system. It underlines the extent to which the integration of plural perspectives into the discursive framework of the social-ecological system, including through the paradigms of Earth system science and governance, is fundamentally in the service of a pragmatic interest in finding solutions to the challenges of climate change, and that this interest ultimately subordinates all others. The conditionality of the terms of inclusion and recognition in this discursive framework is consistent with observations by many critical scholars about expert discourses in other sites. Tania Murray Li notes that these discourses work to exclude alternative perspectives and preclude critical challenge through the ways in which they remain ‘devoid of reference to questions they cannot address, or that might cast doubt upon the completeness of their diagnoses or the feasibility of their solutions’ (Li 2007: 11). These instances of exclusion are what Nikolas Rose refers to as ‘switch points’, or points when a hegemonic discourse reasserts itself by absorbing resistance, at which ‘an opening turns into a closure’ (Rose 1999: 192). Through these ‘switch points’, discourses prescribe and police what it is possible to do and think.

In the encounter of the discursive framework of the social-ecological system and the very different cosmologies of Indigenous peoples that I have described here, the possibility of recognition of one by another, fundamentally different one is

arguably always and inevitably circumscribed by the terms of the former. If it is the case that a Western scientific paradigm can only really engage with or integrate alternative knowledge claims by making sense of them on its own terms, the same is very much true of Indigenous epistemologies. Anthropologist Deborah Bird Rose has observed that

‘Virtually anything can be accommodated [within the Dreaming], from tin cans to Toyotas, but everything must be accommodated according to *the logic of country*. This logic is that each country is its own centre, holds its own law, and is subservient to no other country (Rose 1996: 41; emphasis added).

Thus, while Indigenous communities may have ‘accepted modern scientific explanations for [climate change] phenomena, they are considered to occur parallel to, or within, Dreaming’ (Veland et al. 2013: 318). This idea of climate change finds a place ‘*within* Indigenous cosmologies, rather than supplant[ing] them’ or even being appended to them (Veland et al. 2013: 317; emphasis added). In this way, ‘modern scientific knowledge can take part in the logic of country’ (Veland et al. 2013: 317). In this sense, knowledge about climate change is integrated into alternative, Indigenous epistemological frameworks.

The resistance of Indigenous communities to climate change research and the alternative explanations that they offer represent what Li considers the opposite of the kind of ‘switch point’ more commonly examined by Rose and others. It is one in which ‘targets of expert schemes reveal, in word or deed, their own critical analysis of the problems that confront them’ and as a result the ‘expert discourse is punctured by a challenge it cannot contain’ (2007: 11). A fundamental ‘switch’ can be seen to occur when Indigenous peoples not only critique but appropriate elements of discourses of climate change adaptation to ‘take part in the logic of country’.

That people employ pieces of knowledge strategically is, of course, consistent with the critical insights on the politics of knowledge that inform the discourse of the integration of plural knowledges and perspectives in the first place, as I described above. If the task of decolonising critique is to ‘provincialise’ Western knowledge as but another local knowledge from which interesting or relevant

insights might be drawn (Chakrabarty 1990), then in a sense this is precisely what Indigenous peoples are doing in their encounters with it. At these 'switch points', however, Indigenous communities expose the limits of what is permissible in the discourse of integration and its celebration of diversity.

The uneven terms of integration and the glimpses of incommensurability described here indicate that the discourse of integration is not as open as it purports to be. What is most problematic about this is that the discourse denies the incommensurability of the different perspectives from which diverse people approach the task of adaptation, and the inevitability of politics as these perspectives meet. Scientific and traditional knowledges and practices are depicted in this discourse as all equally of potential value and useability. This is evident in the construction of the engagement of the adaptive Indigenous subjects, along with scientists, in bringing together, 'critically assessing', and discarding as necessary, elements of scientific and traditional knowledges and practices.

The tradition from which this discourse is itself derived remains ultimately the arbiter of what is possible in this engagement, however. But by writing its own role out of its construction of the all-encompassing whole of the social-ecological system, this discourse reproduces the 'view from nowhere' of the modernist, Enlightenment scientific paradigm – which is the basis of many of the critiques that have informed the efforts to democratise and provincialise knowledge described above. N. Katherine Hayles argues that while the study of complex systems in many ways challenges the assumptions of modernist, Enlightenment science, it 'does *not* undermine an omniscient view' (15; emphasis added). In this sense, 'the assertion that all knowledge is local and disconnected may be seen as the other "god trick", as much as the positivistic approach of the unsituated observer' (Arora-Jonsson 2016: 105). Through its 'many universalistic claims' (Hedrén 2014), the discourse of the system presents itself as apolitical, when of course it is anything but.

This is itself a fundamentally political move for, by denying that the part of the system – the Indigenous community – may know or approach climate change adaptation in ways that diverge from what is prescribed by the whole, the

discursive framework of the social-ecological system works to preclude these possibilities. The totalitarian power of this epistemological framework thus exists in the naturalisation, in this manoeuvre, of its politics.

## Chapter 9: Conclusion

The research set out in this dissertation has sought to answer the two questions posed in the introductory chapter: *what are the logics that constitute the discourse of adaptive capacity*; and *how do these logics construct the adaptive Indigenous subject*? I have interpreted climate change adaptation as a site of biopower, or a site at which approaches to undertaking and governing the task of adaptation are co-constituted with ways of understanding the interaction of human communities and their environments. Through this analysis I have placed current research and practice of climate change adaptation within a longer discursive history that began with the emergence of a modern biological conception of life towards the end of the eighteenth century, and with it new scientific disciplines that have informed how adaptation has been thought about since then. The analysis presented in the preceding chapters has examined how a discourse of adaptive capacity has emerged from the interplay of various discursive currents in the context of climate change, producing a biopolitics defined by the ‘pragmatic holism’ of the conception of the social-ecological system in which it is grounded. In this concluding chapter I first outline how this discourse constructs the process of adaptation, the adaptive Indigenous subject, and both opportunities and limitations for this subject. I discuss how these constructions can be made sense of as products of the integrative logic underpinning this discourse, and finally reflect on the politics of its pragmatic holism.

### 9.1 Constructions of the vulnerable and the adaptive Indigenous subject

As I argued in Chapter 3, the discourse of adaptive capacity currently dominates the biopolitics of climate change adaptation. It has reconfigured the discursive space that was established in the 1990s when adaptation to environmental

stimuli, no longer assumed to naturally and necessarily occur, became an object of explicit governance and research within the UNFCCC and IPCC frameworks. Representing in this respect a break from mid-twentieth century conceptions of human adaptation to environmental change in the fields of cultural ecology and ecological anthropology, in this space adaptation has since been taken to be a process that is contingent, historical, and political in the sense that it is to be facilitated through mechanisms of governance. Marked out by the possibility and significance of human choice and action in shaping adaptation outcomes, this discursive terrain has been shaped by a number of governmental discourses, which include what scholars of biopolitics refer to as political rationalities – or implicit and explicit reflections on or articulations of the subjects and objects of governance. In Chapter 3 I outlined three main discourses of adaptation in the international climate change research and governance spheres, which provided a foundation for the analysis of how these discourses appear in the context of Indigenous Australia.

There I showed that, following an initial approach centred on traditional risk management, which constructed adaptation as a matter of minimising exposure to biophysical hazards, this discursive space has been powerfully influenced by a perspective that situates adaptation within the specific political, social, economic and cultural, as well as ecological, contexts in which it occurs. The extent to which a subject is vulnerable or adaptive is accordingly understood to be shaped by these contexts, which has formed the basis of political-economic analysis of how vulnerability is inextricably linked to existing issues of poverty, development, political marginalisation, and so on. Approaches to climate change adaptation therefore began to place emphasis less on combatting climate change impacts in the moment in which they manifest, and more on decreasing and increasing levels of vulnerability and adaptive capacity, respectively. In the context of Indigenous Australia, this approach is apparent in what I have referred to as a contextual discourse of vulnerability and adaptation, and the representation of Aboriginal and Torres Strait Islander peoples as particularly vulnerable to the impacts of climate change, largely due to the legacies of colonisation. This discourse constructs adaptation as a task of ameliorating the vulnerability associated with



the existing conditions of poverty and marginalisation that mediate how communities experience climate change impacts on the ground.

Existing alongside and defining itself in relation to this approach is another discourse which turns from consideration of contextual factors to focus more on the adaptive potential that exists within the adaptive subject itself. It takes up the systems theoretical understanding of adaptation that had featured in the cultural ecological and ecological anthropological study of adaptation prior to the appearance of the latter in the context of anthropogenic climate change. It also incorporates, however, critical insights derived from a number of shifts across the social and natural sciences in recent decades to construct adaptive capacity in terms of an agency to direct and drive the course of adaptation. Reflecting perspectives in the theory and practice of community development, this discourse stresses the 'empowering' potential of placing agency at the centre of the adaptation response of groups of people previously categorised as powerless and vulnerable, as well as the need to recognise the diverse cultural and subjective values and beliefs that inform the particular ways that different groups of people go about adaptation. This discourse is apparent in the representation of Aboriginal and Torres Strait Islander peoples as particularly adaptive, which contrasts with the depiction of vulnerability described above. This is based on a growing appreciation of a deep Indigenous history of adapting to environmental change and ability to navigate changing and hybrid social and cultural worlds. As a vision of how adaptation is to be undertaken, this discourse is concerned less with targeting the conditions of vulnerability as it is with building and facilitating the existing capacity to adapt that is considered to be inherent to all Indigenous communities.

I have argued that in recent years the discourse of adaptive capacity has increasingly dominated the discursive terrain of climate change adaptation, including that of adaptation in Australian Indigenous communities, although it has by no means entirely displaced a contextual reading of vulnerability. The analysis set out in Chapters 4 through 8 has examined how these discourses, particularly those of contextual vulnerability and adaptive capacity, have manifested as climate change adaptation has become established as an object of research and governance in Indigenous Australia. I have focused on points of tension between

these two powerful discourses, examining how the logics underpinning them tend to imply divergent, even conflicting, agendas of adaptation action when they appear in the specific site of Indigenous Australia. I have observed how these discourses have reconfigured, and been reconfigured by, existing community aspirations and modes of identification, and have explored what is at stake in these reconfigurations. My analysis has revealed that adaptation – a discursive space that appears to be characterised by a striking degree of consensus, particularly in contrast to that of the mitigation of climate change – is in fact a site where Indigenous identities and visions for the future are being contested.

In Chapter 4 I provided an overview of the ways in which these discourses have become attached to existing discourses of Australian Indigeneity and associated ideas, including connection to and caring for country, cultural hybridity, and self-determination. The representation of Indigenous peoples as vulnerable in the contextual discourse of adaptation is consistent with indigeneity as what Foucault termed a 'historico-political' discourse. As an expression of identification and resistance by a subjugated people, this kind of discourse highlights the historical developments that have produced the power relations and material conditions of the present – such as, in the context of climate change, many aspects of the vulnerability of Aboriginal and Torres Strait Islander peoples. On the other hand, the discourse of adaptive capacity, with its emphasis on agency and empowerment, appeals to other discourses associated with Indigeneity in Australia. It promises recognition of Indigenous peoples and the value of their cultures and knowledges, as well as opportunities associated with the recognition of the role they can accordingly play in climate change adaptation, particularly in NRM opportunities on country. Stated in very broad terms, what is at stake in the tension between these discourses is, on the one hand, recognition of historical and ongoing injustices, and the support required to address their deleterious effects, and on the other, recognition of the strengths of Indigenous communities, and the roles and opportunities that they may accordingly wish to take up.

My analysis has identified some of the opportunities for communities that are created through the mobilisation of this Indigenous adaptive capacity and its articulation of what it means to be Indigenous. As described in Chapter 5, the imperative of adaptation has lent an additional rationale to Indigenous

involvement in NRM and attention to Indigenous knowledges. Underpinning ideas about caring for country as a means of adaptation is the construction of adaptive capacity as inherent and inalienable to Aboriginal and Islander peoples, residing as it does in a sense of connection to country rather than demonstrable, undisrupted presence on traditional lands. Also crucial to the construction of Indigenous adaptive capacity, as I argued in Chapter 6, is the idea that adaptation consists in negotiating and combining the old and the new as times change, something that indigenous peoples have demonstrated through their histories of both environmental change and colonisation. In Chapter 7 I showed how the discourse of adaptive capacity promises possibilities for self-determination of community affairs, a core goal of the Indigenous rights movement from its inception, but with the support of an 'enabling environment'. In Chapter 8 I explored how the now widespread calls to integrate Indigenous knowledges and approaches to engaging with climate change into the mainstream scientific and policy discursive spaces, would appear to afford Indigenous Australians a long-sought recognition and, with it, authority and roles in climate change response beyond their own communities.

In constructing a vision of Indigenous adaptation in these ways, the discourse of Indigenous adaptive capacity redefines Indigeneity not in terms of traditional culture but in terms of a capacity for survival that Aboriginal and Torres Strait Islander peoples have demonstrated throughout a history of adaptation to environmental change. Understood as an agency to engage in the process of adaptive change, Indigenous adaptive capacity is not associated with any fixed traditional knowledges or practices of caring for country, but rather consists of the potential, at a step removed from the content of any given knowledges and practices, to abandon old and adopt new knowledges and practices as required. Thus, contrary to an historically powerful depiction of Indigenous peoples as 'traditional' and 'primitive', it is apparent upon close examination that what is valued in this discourse is in fact the possibility to move beyond tradition – that is, the capacity for change that Indigenous peoples have always demonstrated in order to survive. This shift in the representation of Indigeneity can be seen to have been informed both by the efforts of critical Indigenous studies scholars, as well as by a broad shift in thinking about human adaptation that emphasises the

agency involved in navigating change. The latter is, I suggest, becoming all the more powerful in light of a growing spectre of unprecedented, non-linear climatic changes that are seen to call into question the ongoing relevance of historical, ‘traditional’ adaptive responses. As a result of these influences, Indigenous adaptive capacity is being reconceived as a way of being that, it is claimed, refuses the binaries of indigenous and non-indigenous, tradition and modernity, and so on that defined modern thought.

This is, of course, in one sense a welcome change from outdated tropes that equate indigeneity with primitivism. However, I argue that although this discourse identifies Indigenous peoples with a property – adaptive capacity – that lies deeper than any given cultural expressions to which it gives rise, it is no less essentialist in its effects. The ways in which the Indigenous adaptive subject is constructed through the discourse of adaptive capacity have the effect of constraining what Indigeneity can mean in the context of climate change adaptation, and in particular how it can be deployed in claims on the state by Aboriginal and Torres Strait Islander groups. Thus I argue that the empowering reading of the peoples as agents of adaptation displaces, and comes at the cost of, readings of Indigenous vulnerability and adaptive capacity that insist that the former is a result of, and the latter constrained by, histories of colonisation and dispossession. In particular, in Chapter 5 I argued that the possibility of an inherent, even if latent, connection to country that has survived dispossession, undermines the grounds on which to make claims for the restitution of land in order to be better able to adapt to climate change. In Chapter 6 I showed how a discourse of cultural hybridity discounts the reasons why communities have trouble maintaining traditional cultures or adopting non-Indigenous ways of life. In Chapter 7 I argued that a discourse of transformative adaptation is associated with an understanding of the roles of Indigenous communities and the state that allows caring for country programmes and other adaptation initiatives to continue to go under-resourced – while an inherent Indigenous adaptive capacity is at the same time positioned as itself a fruitful resource with which to realise a vision of caring for country across the Australian continent. And in Chapter 8, I suggested that Indigenous politics in the context of climate change adaptation are constrained by the requirement of unity – among Indigenous peoples as well as

with the wider system of which they are positioned as but a part – including that they serve the national interest through caring for country. In these ways, the ‘double bind’ that critical scholars have identified as being at play in discourses of indigeneity is reproduced in specific forms here, requiring Indigenous peoples to identify with a connection to country unaffected by dispossession; with a willingness to let go of traditional culture to embrace change; with a capacity to make do without adequate resourcing; and with the interests of the unified wholes of the nation and of the planet – all lest they be deemed inadequately Indigenous.

My analysis suggests that the discourse of Indigenous adaptive capacity, while potentially affording valued opportunities, also threatens to dissociate the imperative of adaptation from considerations of the wider context in which it occurs, which includes factors such as the barriers facing communities, the resources they require, and the existing commitments with which they approach the task of adaptation. In other words, the discourse of adaptive capacity somewhat paradoxically tends to discount the reasons for and objectives that saw adaptation undertaken in the first place: the forms of vulnerability that exist in Indigenous communities and the types of transformative change that Indigenous peoples aspire to. As I explain in the following section, this is because this discourse has, taking adaptive capacity as both the means and the end of adaptation, come to focus on the *process* of adaptation at the expense of context.

## **9.2 Human agency and adaptive potential**

As I have shown in this dissertation, the discourse of adaptive capacity is in large part derived from the theory of the social-ecological system, which takes adaptive potential to exist in functional interaction within the system. Reflecting the ‘pragmatic holism’ with which the concept of the ecological system was first developed, the discursive framework of the social-ecological system – and the paradigms of Earth system science and governance that have emerged within it in recent years – has since integrated social perspectives on adaptive change, seeking to bring together different disciplinary perspectives into a coherent theoretical and governmental programme for adaptation. These efforts have included calls for the integration of the social with the ecological; of the study of

the human dimensions of climate change with analysis of the Earth system; of the social with the natural sciences; and of indigenous and other alternative, lay knowledges with Western science. The discourse of adaptive capacity is a product, I have argued, of the integration of social scientific insights about how change occurs in the social world – and, crucially, the role of human agency and political engagement in driving it – into this broader discursive framework.

The discourse of adaptive capacity represents an attempt to address the limitations of the understanding of adaptation drawn from systems ecology and, at its roots, evolutionary biology. A core problem for evolutionary and systems theoretical accounts of adaptation had been to account for how the process of adaptation could produce novelty and transformative change from the circular interaction within the living system and its passive engagement with selective environmental pressures, including its tendency to achieve survival by ‘bouncing back’ from the disturbances posed by such pressures. By introducing into this picture the agency of humans to choose and drive adaptive change in the context of climate change, and integrating ‘systems-based’ and ‘actor-based’ analyses in order to achieve a fuller account of this adaptation, the discourse of adaptive capacity reflects the pragmatic orientation of systems ecology. This integrated perspective, which is considered particularly important in light of growing concerns that the impacts of climate change may unfold in more unpredictable and non-linear ways than previously anticipated, has seen adaptive capacity constructed as the vehicle to choose to abandon the status quo and pursue ‘transformative’ adaptation. In its emphasis on transformative change, the discourse of adaptive capacity appears to go beyond the mode of governmentality that scholars of biopolitics have termed preparedness, involving the largely passive accommodation and acceptance of change.

Crucial to the development of the discourse of adaptive capacity have been those same critiques and insights from critical social scientists which informed the contextual discourse of vulnerability and its emphasis on the political, social, cultural and economic dimensions of adaptation. Indeed, the discourse of adaptive capacity has subsumed and extended or reconfigured many of these insights, such as the attention to the cultural dimensions of vulnerability and adaptability. It purports to take account not only of the ‘exterior’ dimensions of

the contexts in which people adapt, for example, but also of the ‘subjective, interior world’ and the values and beliefs that shape people’s engagement in climate change response (O’Brien and Wolf 2010: 232). Mirroring Amartya Sen’s extension of his human development theory of entitlements – or access to resources – with the concept of capabilities – or the agency to obtain and take advantage of access to resources – this discourse heeds but goes beyond the contextual understanding of adaptation as development to construct adaptive capacity as the agency to drive development, including by intervening in the aspects of human development that further generate adaptive capacity. In short, the inclusion of a concept of human agency in the discourse of adaptive capacity represents an attempt to account for and accommodate within the discursive framework of the social-ecological system a sense of contingency that is seen as unique to the human world – specifically, the possibility for humans to direct and redirect the course of their own affairs.

I have argued that through these shifts the discourse of adaptive capacity has come to constitute a particular governmentality, or rationality of the government of adaptation, prescribing how adaptation ought to be undertaken and the roles to be played by various actors. In incorporating understandings of the political and social nature of the process of adaptation in order to account for how adaptive change in human communities is possible, this rationality indeed explicitly acknowledges and constructs sites of adaptation as political spaces. One dimension of this political rationality at the site of Indigenous adaptation is the construction of the adaptive subject as not an individual person but the whole community, as I discussed in Chapter 5. This reflects an understanding of adaptive capacity as a property of the human collective that exists, necessarily, in a social context, but also as an expression of a subjective sense of identity. A further core aspect of this rationality, as I argued in Chapter 6, is the construction of the agency of the adaptive subject, who makes adaptation happen by purposefully learning how to live with the impacts of climate change and actively selecting and trialling adaptation options. Chapter 7 considered another important aspect of the political rationality of adaptive capacity: that of the role assigned to the enabling environment, as the wider political context in which the adaptive subject undertakes adaptation. Reflecting an appreciation of the ways in which broader

structures and 'cross-scale' effects produce both vulnerability and adaptive capacity, the concept of the enabling environment introduces into this governmentality the possibility of engagement and intervention by actors across an expanded conception of the social-ecological system. Finally, in Chapter 8 I discussed the calls for reflexive and strategic engagement with plural 'useable' knowledges from diverse disciplines and previously marginalised – including indigenous – voices to assemble the best solutions to the problem of climate change. This envisages a revised role for traditional institutions of authority – the architects of earlier 'top-down' models of environmental governance – to instead facilitate these integrative and participatory efforts. In this context the discourse of adaptive capacity secures the engagement of adaptive Indigenous subjects by enrolling them in the task of strategically drawing upon and combining Indigenous and Western, traditional and modern knowledges and practices.

Through the construction of adaptation as a process that involves building and exercising the agency to engage in adaptation in the ways outlined here, the discourse of adaptive capacity takes the process of adaptation as an end in itself. The circularity of this process, in which adaptive capacity is exercised in order to build more adaptive capacity, can be seen in the construction of caring for country as the internal, interactional dynamics of the social-ecological system that constitute its function and serve no other end than its survival, as I described in Chapter 5. It is also evident in the ongoing process of learning and dialogic engagement in anticipation of and preparation for adaptive change. As I argued in Chapters 6 and 7, the logics that hold that this process is sufficient in itself suggest that it need result in little material action. This means that the construction of the potential for transformative change in this discourse tends to remain limited to just that: a potentiality. This emphasis on process reflects the systems theoretical foundations of the discourse of adaptive capacity – and indeed, the object of maintaining adaptive potentiality is not an accidental discursive effect of the emphasis on investing in adaptive agency but is in fact inscribed in implicit logics that systems ecology has drawn from evolutionary biology.

In my analysis I have observed how, despite the influence of the social scientific concepts that feature in the discourse of adaptive capacity to account for social and political change, the evolutionary biological foundations of the discursive



framework of the social-ecological system continue to inform, and circumscribe, the construction of the possibility of such change. This is evident where adaptation is implicitly and explicitly constructed as a matter only or primarily of perpetuating the continuity of the social-ecological system engaged in the process of adaptation, with all other considerations subordinated to the imperative of its survival. More specifically, this evolutionary biological legacy has informed the construction of an Indigenous adaptive capacity that, analogous to the functional interaction of the living system, exists in the relations of community and country, as discussed in Chapter 5. The ongoing interaction of the social-ecological system of community on country is taken to generate adaptive potential, and this potential is seen to be enhanced when communities engage in the various exercises in anticipating climate change impacts that I described in Chapter 6. In Chapter 7 I examined how the logic of the ‘economics of evolutionary flexibility’, which prescribes only the most flexible and minimally costly adaptive action required to ensure survival, constrains the scope of the transformative adaptive action that may be supported by the enabling environment. In these ways the governmentality of adaptive capacity can be seen to continue to draw on those understandings of the living organism in interaction with its environment that had, on Foucault’s account, informed the emergence of biopolitics two centuries earlier.

Glimpses of these logics betray the extent to which the discourse of adaptive capacity remains influenced by a neo-Darwinian understanding of the evolution of life as an effect of environmental selective pressures. This is a perspective that views individuals and communities as subject to natural principles that preclude the forms of transformative adaptive change that the discourse of adaptive capacity at the same time promises them. These competing conceptions of the scope for human agency are reflected in the fundamental ambivalence about the place of the human within the ecological system that can be seen in the early articulations of the concept of the Earth system in the first half of the twentieth century. Humans are thus alternately viewed as just another element within this system, and subject to the same physical laws that govern it, and, on the other hand – by demonstrating a capacity to know and to intervene in the functioning of planetary systems – as therefore occupying a place outside the system and a role

that cannot be made sense of in the terms of the system. I argue that this ambivalence is a product of the integrative impulse underpinning the discursive framework of the social-ecological system, which in turn sees the discourse of adaptive capacity draw interchangeably on perspectives that are fundamentally at odds with one another. As a programme of adaptation governance, this discourse therefore contains dissonant understandings of the nature and possibilities for human action in the face of environmental challenges. While its all-encompassing, Panglossian orientation is at the heart of the appeal of this discourse and of ecological systems thinking more broadly (Gamm 1985; Watts 2015), I argue that, with humans cast by turns as objects of environmental forces and as agents of change, the scope for a politics that might see genuinely transformative adaptive change is undermined.

### **9.3 The politics of pragmatic holism**

The appeal of the discursive framework of the social-ecological system, including the paradigms of Earth system science and governance, lies in its promise of pragmatic holism – of bringing together previously distinct entities and perspectives to achieve new ways of understanding and approaching problems. In the context of climate change adaptation this integrative logic has taken the form of the efforts I described above to engage with critical social and natural scientific insights, as well as traditional knowledges and other alternative perspectives, within a broader ecological systems framework. This is the basis of the attempt discussed above to incorporate into the governmental vision of the adaptive capacity discourse an understanding of the role of human agency and political engagement in driving transformative change in the social world. However, I have argued that within this programme of adaptation governance the potential of the role of agency and political engagement is curtailed by the implicit commitments drawn from the discursive framework of the social-ecological system. Put simply, these commitments include an ontological proposition that the social and the ecological are equal parts of the single whole of the system – and the system often appears to be ascribed a physical existence in a way that jars with the assertion by its theorists that it is a heuristic (Hedrén 2014). These underlying commitments also include an epistemological proposition that diverse ways of knowing the world can be brought together within a single discursive schema, as

well as a normative commitment to the integrity and continuity of the system. This discursive framework thus has its own politics, which implicitly and explicitly subordinate the parts to the whole in the construction of the field of possibilities available to adaptive subjects.

As discussed in the previous section, conflicting conceptions of human agency are evident in this discursive framework, with logics derived from evolutionary biology appearing in ways that often have the effect of limiting the scope of the social and political change that is constructed as possible. The limits on the scope of possibilities are most stark, however, where the discourse of adaptive capacity calls for engagement with plural knowledges and approaches to adaptation, as I discussed in the previous chapter. As argued there, the effect of the integration of these diverse ways of knowing and acting on climate change within the overarching discursive framework of the social-ecological system is that they are recognised and accepted only insofar as they are consistent with the terms of this framework. For example, Indigenous cosmologies are afforded recognition when they prompt a sense of responsibility to manage the impacts of climate change in natural landscapes; they are dismissed and erased when, on the other hand, they suggest that climate change is a form of spiritual retribution to be addressed by performing appropriate spiritual ceremonies, for example. In the former case they are welcomed as valuable contributions to the range of responses required to address climate change; in the latter they are corrected and replaced. This conditionality means that the autonomy of Indigenous peoples to choose how – and indeed whether – they go about adaptation is circumscribed. Thus, while this discourse of adaptive capacity purports to make room for community self-determination, it ultimately would tend to disallow communities from opting out of adaptation programmes altogether, for example. In these ways the politics of this discursive framework limits what is not consistent with the ontological, epistemological and normative commitments of the discourse.

What is concerning here is that this discursive framework imposes these limitations in the very move of apparently opening up the politics of climate change adaptation. In other words, most concerning is not that indigenous and non-indigenous perspectives may prove incompatible, nor even that there are limits to the self-determination of Aboriginal and Torres Strait Islander

communities where the state effectively reserves a prerogative to intervene in the best interests of communities. It is that the discourses of adaptive capacity and the social-ecological system appear to offer to Indigenous communities self-determination as part of the broader room for political engagement about what adaptation ought to involve, when in fact the scope for such engagement is circumscribed by the very terms of engagement. The governmentality of adaptive capacity constructs for its subjects a chimerical autonomy that is undercut by its own discursive foundations.

This double move is made possible by the naturalisation of the integrative logic of the discursive framework of the social-ecological system. This discursive framework is of course not the neutral ground for the integration of diverse knowledges – or the ‘view from nowhere’ – which it in this context appears, but itself a product of a contingent and historically specific series of discursive developments. It is, in other words, on the basis of a specific discursive history that a reflexive, integrative approach is now articulated as necessary and productive in responding to the challenges of climate change. However, this framework presents as apolitical what is most political of all: a pluralism motivated by the pragmatic holism of ecological systems thinking that in fact precludes some ontological and epistemological perspectives, such as some of those presented by indigenous peoples from around the world. Thus, while it is claimed that Earth system thinking, for example, represents an effort to move ‘beyond modernity’, as discussed in Chapter 5, the discursive framework to which it belongs retains from the modernist worldview a universalising and totalising logic.

In thus fundamentally defining and limiting the ways in which the challenge of climate change can be understood and therefore approached, this discursive framework threatens to preclude political engagement about what adaptation should involve in Australian Indigenous communities. I have argued in this dissertation that although the discourse of adaptive capacity represents an extension of efforts to open up this politics, it displaces critical insights that informed the historical reading of Indigenous vulnerability and that place adaptation in the political context of Indigenous aspirations for community development, caring for country and self-determination. It instead is the basis of a

biopolitical construction of the adaptive Indigenous subject that, detached to some extent from consideration of such contextual factors, ascribes to communities an inherent adaptive capacity and renaturalises the process of adaptation as that of maintaining the adaptive potential of the social-ecological system. As the scope to contest the nature and ends of adaptation thus appears to be circumscribed by the implicit political commitments of the discursive framework of the social-ecological system, it remains to be seen whether this governmental programme can deliver the kinds of transformative adaptive change to which Indigenous communities aspire, and that will prove necessary as the effects of climate change unfold into the future.

## Appendix: Corpus of texts related to climate change adaptation in Indigenous Australia

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<http://indigenousclimatechange.com.au/default.aspx>. Audio accessed and transcribed 1 August 2015.
- C02      Bell, D. n.d. *Dimensions of climate change: conversations of community-based adaptation: Part 3.*  
<http://indigenousclimatechange.com.au/default.aspx>. Audio accessed and transcribed 1 August 2015.
- C03      CLC. n.d. Website content. Central Land Council.  
<http://www.clc.org.au>. Accessed and archived 1 August 2015.
- C04      COAG. n.d. *Improving emergency management outcomes for remote Indigenous communities in Northern Australia.* Council of Australian Governments: Review of Natural Disaster Relief and Mitigation Arrangements. Available at  
<https://www.em.gov.au/Documents/Improving%20Emergency%20Management%20Outcomes%20for%20Remote%20Indigenous%20Communities.pdf>
- C05      IDCC. n.d. *Indigenous dimensions of climate change.* Website content. <http://indigenousclimatechange.com.au/default.aspx>. Accessed and archived 1 August 2015.
- C06      Karrkad Kanjdji Trust. n.d. Website content.  
<http://www.kkt.org.au/>. Accessed and archived 1 August 2015.
- C07      KLC. n.d. Website content. Kimberley Land Council.  
<https://www.klc.org.au/>. Accessed and archived 1 August 2015.

- C08 Langton, M. n.d. *Dimensions of climate change: conversations of community-based adaptation: Part 2.*  
<http://indigenouclimatechange.com.au/default.aspx> Audio accessed and transcribed 1 August 2015.
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- C13 DCCEE. 2007. *National climate change adaptation framework.* Canberra, ACT: Department of Climate Change and Energy Efficiency.
- C14 EMA. 2007. *Keeping our mob safe: a national emergency management strategy for remote Indigenous communities.* Canberra, ACT: Attorney-General's Department, Emergency Management Australia.
- C15 L&WA. 2007. *The engagement of Indigenous Australians in natural resource management: key findings and outcomes from Land & Water Australia funded research and the broader literature.* November. Prepared by Alice Roughley and Susie Williams. Canberra, ACT: Land & Water Australia, Australian

Government.

- C16 PMSEIC. 2007. *Climate change in Australia: regional impacts and adaptation; managing the risks for Australia*. June. Canberra, ACT: Prime Minister's Science, Engineering and Innovation Council Independent Working Group.
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- C18 AHREOC. 2008. *Native Title Report 2008*. [With special focus on climate change] Sydney, NSW: Aboriginal and Torres Strait Islander Social Justice Commissioner, Native Title Unit, Australian Human Rights and Equal Opportunity Commission.
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- C34 NAILSMA. 2010. *Climate change adaptation workshop report*. Prepared in collaboration with Balkanu Cape York Development Corporation, Kimberley Land Council, Northern Land Council and Carpentaria Land Council. Darwin, NT: Northern Australian Indigenous Land and Sea Management Alliance.
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- C36 O'Connor, M. H. and Prober, S. M. 2010. *A calendar of Ngadju seasonal knowledge*. A report to Ngadju Community and Working Group. Floreat, WA: CSIRO Sustainable Ecosystems.
- C37 Balanggarra and KLC. 2011. *Balanggarra Healthy Country Plan*. WA: Balanggarra Aboriginal Corporation and Kimberley Land Council.

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