Gatekeepers, guardians and gatecrashers: the enactment of protocols to protect Indigenous knowledge, and how protocols order these practices.

Margaret E. Raven
BSc (Hons)

This thesis is presented for the degree of Doctor of Philosophy of Murdoch University

December 2014
I declare that this thesis is my own account of my research and contains as its main content work which has not previously been submitted for a degree at any tertiary education institution.

............................................................
(Your name)
Abstract

This thesis is a study on protocols. This thesis is a study of research practices and Indigenous knowledge which seeks to explore ‘how protocols order research practices and knowledge’ and ‘how organisations and individuals enact protocols’ In research contexts protocols are often put forward as mechanisms to overcome the theft and misuse of Indigenous knowledge. Practitioners who draft protocols treat them as rules or guidelines that engender relationships. Yet despite the growing number of protocols developed for this purpose, only a limited number of empirical studies have been done, which explore how protocols order practices and knowledge when they are introduced into a bureaucratic organisation. This thesis argues that protocols order practices and knowledge both rationally and relationally. Protocols direct and assemble at both the organisational and the individual level through assembling entities that embed rational and relational order. They do this in ways that can be considered as gatekeeping, guardianship and gatecrashing.

This thesis was approached as a mapping exercise that used the three methods collectively to map protocol assemblage, enactment and entanglement at the level of the institution and the individual. Firstly, the ‘Indigenous Intellectual Property Protocol’ (IIPP) of the now defunct Desert Knowledge Cooperative Research Centre is used as a case study to explore how protocols operate in bureaucratic organisations. It pays particular attention to protocols in cooperative research endeavours. Secondly, the notion of assemblage is used as a technique to map the entities that form protocols. Thirdly, a practice lens is utilised to explore the practices of protocol enactment. I also pay attention to the control mechanisms and practices of branding and organisational story telling that entangle protocols in bureaucratic settings.

This thesis makes unique contributions to the field of knowledge in a number of ways. Firstly, through utilising the concept of assemblages this thesis presents a method for analysing protocols that pay attention to entities, and material and expressions that form them. Secondly, the presentation of a typology of protocol enactment (based on gatekeeping, guardianship and gatecrashing) provides a tool that actors can use to understand their own research practices. Lastly, this thesis contributes to building a body of
knowledge on protocols. In this regard it provides hooks on which others can anchor their analysis and can critically engage in a debate on ‘what are protocols?’ and ‘how do protocols operate in practice?’
Acknowledgements

How does one acknowledge all of those people who over the course of many years have contributed their time, energy, mind and thought to this endeavour?

Thanks first go to three wonderful supervisors who have at various times throughout this thesis provided guidance and support. Thank you Dr Kathryn Trees and Dr Laura Stocker for the on-going patience, support and valuable feedback. Many times, I struggled with this thesis, and you were both there throughout this marathon event. The late Dr Michael Booth, who left us all too soon and whom in the very early stages of the PhD, provided long, warm and thought provoking conversations.

Thanks to the people at the Desert Knowledge Cooperative Research Centre, the staff, researchers, and extended partners, who allowed me to question them at length on protocols and observe some of their own research and organisational practices.

Thanks also to Michael Davis and Jane Anderson who work in the field or found themselves in this area of research and spared time to share their ideas on the topic.

This thesis would not have been possible without the support of my loving partner, my dear friends and family who put up with my grumpy moods, and absent-mindedness. Special thanks go Andrew Mechan, Tui Raven, Cheri Raven, Katerina Lecchi, Kate Vallentine, Wendy Kennewell (nee Lindon), Na’ama Carlin, Sarah Lumley, Michaela Evans, Jen Skattebol, Margaret Donaldson, Patrick McCloskey, Sandra Gendera and Marie Delaney who have all in one way or another provided a meal, an ear to my ranting, a shoulder to cry on, a warm bed to sleep in at night, or read drafts of chapters.

It is my firm belief that PhDs would not be possible, certainly not in my instance, if it were not for the existence of nature or cafés. Because most universities in Australia are located in densely populated cities on the coastal fringe, the ocean, rivers, parks and nature reserves
are some of the few places to go to connect to ‘nature’. My thanks go to those places where I found solitude and contemplation, and to the numerous people who work to keep these places for humanity. Likewise, there are too many cafes to count, but the staff in all of them are to be commended, for allowing me to sit in their establishments for an hour or more, while only purchasing one pot of tea.
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Abbreviations

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<tbody>
<tr>
<td>AIATSIS</td>
<td>Australian Institution of Aboriginal and Torres Strait Islander Studies</td>
</tr>
<tr>
<td>CDU</td>
<td>Charles Darwin University</td>
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<tr>
<td>CLC</td>
<td>Central Land Council</td>
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<tr>
<td>CRC</td>
<td>Cooperative Research Centre</td>
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<tr>
<td>CSIRO</td>
<td>Commonwealth Scientific and Industrial Research Organisation</td>
</tr>
<tr>
<td>DKCRC</td>
<td>Desert Knowledge Cooperative Research Centre</td>
</tr>
<tr>
<td>HREC</td>
<td>Human Research Ethics Committee</td>
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<tr>
<td>IIPP</td>
<td>Indigenous Intellectual Property Protocol</td>
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<tr>
<td>IP</td>
<td>Intellectual Property</td>
</tr>
<tr>
<td>IPR</td>
<td>Intellectual Property Rights</td>
</tr>
<tr>
<td>NH&amp;MRC</td>
<td>National Health and Medical Research Council</td>
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<tr>
<td>PIC</td>
<td>Prior informed consent</td>
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<tr>
<td>R&amp;D</td>
<td>Research and development</td>
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Use of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tr>
<td>Aboriginal and Torres Strait</td>
<td>In this thesis I use the terms ‘Aboriginal and Torres Strait Islanders’ and ‘Indigenous’. When using the term ‘Aboriginal and Torres Strait Islanders’ and ‘Indigenous’, I refer to the breadth of Indigenous communities in Australia. This includes the traditional owners and custodians, and the Indigenous peoples who have lived in Australia for thousands of years. The term ‘Aboriginal and Torres Strait Islanders’ is preferred in government and official contexts. When referring to a single community or group, the term ‘Indigenous’ is often used. It is important to recognize and respect the language and cultural differences within these communities.</td>
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<tr>
<th><strong>Islander, and Indigenous People/s</strong></th>
<th>Islanders’ I am specifically referring to the first peoples of Australia. When using the term ‘Indigenous’ I am referring to the broader international discourse of recognition of the rights of first peoples around the world, which includes Aboriginal and Torres Strait Islander people/s. The term people/s is used to refer to, at the same time, individual Indigenous people; and a group, clan or nation of Indigenous peoples.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Desert Knowledge Story</strong></td>
<td>The term ‘The Desert Knowledge Story’ is used to refer to the story that was officially told about the Desert Knowledge CRC through its Annual Reports and Exit Report.</td>
</tr>
<tr>
<td><strong>‘desert knowledge’</strong></td>
<td>The term ‘desert knowledge’ is used to refer the concept of desert knowledge used throughout the DKCRC. It is also used to refer to the branding process of knowledge in the desert that the DKCRC engaged in.</td>
</tr>
<tr>
<td><strong>Ensemble</strong></td>
<td>A group of people who perform together. I use the term throughout this thesis to draw attention to the existence of relational order.</td>
</tr>
<tr>
<td><strong>Indigenous knowledge</strong></td>
<td>By Indigenous knowledge, I take to mean also ‘traditional cultural expression’, ‘traditional knowledge’ and ‘folklore’ – terms used throughout the United Nations Convention on Biological Diversity, and the World Intellectual Property Organization in both their conventions and their deliberations.</td>
</tr>
<tr>
<td><strong>Machine</strong></td>
<td>A group of people, or actions that are based on standardisation and calculability. I use the term throughout this thesis to draw attention to the existence of rational order.</td>
</tr>
<tr>
<td><strong>Order and ordering</strong></td>
<td>The terms ‘order’ and ‘ordering’ are used in the thesis to refer to the direction and directive, as well as assemble/patterning of practices and knowledge.</td>
</tr>
<tr>
<td><strong>Protocols</strong></td>
<td>In some cultures it is a custom to introduce one’s self and to become acquainted with your surroundings and gain an understanding about the correct and appropriate way of behaving in order to be accepted and be perceived as a bona fide visitor interested in building relationships. This is a general way of defining protocol. My application of the term ‘protocol’ in this thesis is used specifically to refer to lessons learned in relation to a particular bureaucratically derived protocol (the Desert Knowledge CRC ‘Indigenous Intellectual Property Protocol’). Because of this, I differ from Galloway and Thacker (Galloway and Thacker 2004; Galloway 2004) on the location of protocols. Where they focused on protocols in computer network, I focus on protocols that are specifically drafted and designed through a research organisation to influence and control research with Indigenous communities. In a few instances, I also employ the term protocol in the former sense. Where the term is used in the former sense, I indicate this via writing the term ‘customs’ in brackets.</td>
</tr>
<tr>
<td><strong>Practice and practices</strong></td>
<td>The terms practice and practices are used in the thesis to refer to an act, action or actions. Practice and practices are also inferred through the terms ‘enactment’ – used to explore the performative aspects of ordering.</td>
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<tr>
<td><strong>Rational</strong></td>
<td>The term rational is used throughout this thesis to refer to the ideas of standardisation, calculability, and efficiency.</td>
</tr>
<tr>
<td><strong>Relational</strong></td>
<td>The term relational is used to refer to connections, collaborations and flexibility.</td>
</tr>
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</table>
Prologue

Morning call to prayers had woken me from a light sleep. From the balcony door the rising morning sun could be seen over the small inlet of the Mediterranean Sea. I’d arrived alone the day before on a train journey from Cairo to Alexandria, to attend the Bridging Scales and Epistemologies conference, and to present a paper on the contours and boundaries of the public domain. The conference was being held at the Bibliotheca Alexandrina, a commemorative library to one of the original great houses of knowledge.

The conference participants were all milling around in the lobby waiting for the bus to take us to the library. Despite the excitement of being in Egypt, and the knowledge that this land was of huge historical significance to many of the major world religions, I was nevertheless experiencing a mild bout of ‘culture shock’. While walking out for the bus I’d noticed a woman who, to me, looked like she was Aboriginal; but after eight months of living in Japan, I wasn’t sure that I was able to conclusively tell if she was. She was with a woman who appeared to be of Anglo-Saxon heritage, and they were talking and smoking cigarettes. As all the conference participants made their way towards the buses, I heard a distinctive Australian accent. I turned around to catch the eye of the dark skinned woman and white woman I’d only moments before eyed. As we took our seats on the bus I said to the dark skinned woman, ‘I thought you were Aboriginal, but I wasn’t sure.’ Over the course of the week I spoke with them both, and struck up a conversation with the ‘white woman’ about the previous case study I had been engaged to undertake, and my interest in protocols, or at least the way that information moved from an ‘indigenous place’ to a ‘non-indigenous place.’ In the course of these conversations, I came to learn about the Desert Knowledge Cooperative Research Centre (DKCRC) Indigenous Intellectual Property Protocol (IIPP), and was invited to study how it was implemented. As a person with heritage from the desert and interest in the study of knowledge, I was captivated by the ‘desert knowledge’ brand, as much as by the case study on protocols.

I include this story because it, in some ways, approximates the ideas of rational and relational ordering of protocols that is discussed and explored in this thesis. It was serendipitous that while at the conference in Egypt, Alexandria I heard these two people talking with their distinctively Australian accents. While their accents initially drew me to them, once as I realised that one of the women was Aboriginal I was compelled to introduce myself. This sense of duty or obligation to introduce myself is based on long held Aboriginal protocols. It wasn’t anything that had ever been written down. The protocol was a sense that I was given as a child, which was reinforced as I grew up, that in situations where you meet other Aboriginal people there are certain things that you should do. One of the things you should do is introduce yourself – who you are, where you come from, and
why you are there. This aspect of protocol is the rationalised and standardised part of Aboriginal culture and knowledge. It is the set of rules or obligations around how you ought to relate to one another. In following this rule, by introducing oneself, this protocol establishes and maintains relationships and kinship. That is, the standardised obligation to introduce oneself (the rational order of protocols) establishes and maintains relational order. In the following chapters I argue, borrowing from Galloway (2004), that protocols order practices and knowledge both rationally and relationally.
Chapter One. Protocols: An Introduction

*The contradiction at the heart of protocol is that it has to stabilize in order to liberate* (Galloway 2004:95).

**Introduction**

Imagine that a researcher within a university wishes to access Indigenous knowledge. Because of the perceived value of Indigenous knowledge a protocol is put in place to decrease the possibility of ‘theft’. This protocol includes an outline of how this access should occur, and who owns the property in the Indigenous knowledge, and how the benefits from the access should be distributed. The researcher desiring to access Indigenous knowledge has to contend with the protocol. As well as considering how they will choose to enact the protocol, the protocol will also order their research practices and knowledge in particular ways. This scenario is a tension between the autonomy and freedom of the researcher, the heteronomy and control of the university, and the rational and relational conceptions of knowledge. The university may set up, or the researcher may enact, the protocol in any number of ways that could be considered as gatekeeping, guardianship or gatecrashing. Each character personifies differing agencies of interest and motivation that universities or researchers may express when enacting protocols.

The scenario above is provided to illustrate, in part, how protocols may order research practices and Indigenous knowledge, and how individuals and organisations may enact protocols established to protect Indigenous knowledge. While this scenario is a common occurrence in research organisations where actors seek to access Indigenous knowledge, it has seldom been analysed. The provision of the scenario, and associated conceptual characters, is a step towards building a theoretical and ethical framework through which researchers can more fully understand and evaluate protocols. This framework, which I contend, is not only missing from the discussion of protocols; but may be required for the evaluation of protocols, that are increasingly introduced into bureaucratic organisations as a mechanism to reduce the risk of ‘theft’ of Indigenous knowledge.
This thesis is about protocols. I focus on how protocols order research practices and Indigenous knowledge, and how organisations and individuals enact protocols. While there has been considerable critique and analysis of other mechanisms that protect Indigenous knowledge (as I discuss below), the same level of criticism has not been directed at protocols. Protocols are presumed to work because they focus on the flow of Indigenous knowledge rather than on simply assigning property rights to it. Embedded in the introduction of protocols into bureaucratic organisations is the assumption that if you set the rules for how people ought to access, store and use Indigenous knowledge, people will follow them, and they will do this rationally.

Protocols require standardisation in order to operate; yet they seek to engender a relational approach to research practices and knowledge. This, as I quoted at the beginning of this chapter, is ‘the contradiction at the heart of the protocol’ (Galloway 2004:95). This thesis suggests that protocols, rather than a single tool, are assemblages of entities (protocol-as-assemblage) that assemble both rational and relational order. Assemblage, as I discuss in further detail in Chapter Three, is a notion used by Deleuze and Guattari (Deleuze and Guattari 1987) to explain processes of organising and arranging (Livesey 2010). Assemblage thought is a form of relational thinking that seeks to look at both the whole and the parts (McFarlane and Anderson 2011).

Protocols direct and assemble research practices and knowledge through assembling rational and relational order, control and freedom, standardisation and flexibility, and competition and cooperation in a dynamic tension. This occurs through two axes: the organisational, and the individual. Bureaucratic organisations utilise protocols to embed routine research procedures that attempt to create rational and relational actors (or more precisely rational and relational practices) in ways that allow knowledge to be treated as a separate unit or a relational thing. Some actors enact protocols routinely and willingly submit to the control of the bureaucracy and utilise them to further their own ends. However, not all actors do so. Some actors, guided by their own autonomy, seek to change the protocol in ways that meet wider needs; while others, ignorant of the protocol or guided by self-interest circumvent them. To add to the complexity, the very act of enactment, as a practice, (re)produces protocols (Feldman and Orlikowski 2011).
This thesis employs the use of a case study to explore protocols in organisational contexts. I chiefly analyse the Indigenous Intellectual Property Protocol (IIPP) that was developed by the Desert Knowledge Cooperative Research Centre (DKCRC), an Australian Cooperative Research Centre (CRC). The DKCRC was, as the name suggests, a CRC focused on research in desert environments, and motivated to recognise the commercial and social value of knowledge from these places. The DKCRC, as I discuss in Chapter Four was a network of partner organisations that operated in the desert regions of Australia from 1 July 2003 to 30 June 2010.

The IIPP, established at the inception of the DKCRC, was one of the first protocols established by a CRC to guide practices associated with the dual challenge of safeguarding Indigenous knowledge while allowing for its commercialisation. The IIPP set out a series of clauses which sought to provide guidance to DKCRC actors on research practices pertaining to the access, collection, storage and use of Indigenous knowledge, and the sharing of benefits from the commercialisation of Indigenous knowledge (Appendix 1). The IIPP, as I discuss in Chapter Five was intended as a set of rules of engagement, a mechanism to assign property rights to Indigenous knowledge, and to contribute to broader benefits for Indigenous people/s. It achieved these broad aims as an assemblage of ‘Indigenous intellectual property,’ contracts and agreements, and formal ethics. This assemblage of entities drew on consequential, contractarian, rights-based and deontological ethics in various ways that rationally and relationally ordered the research practices of DKCRC actors (how they enacted the IIPP) and the Indigenous knowledge they sought to utilise. The scenario I outlined at the beginning of this chapter provides one way of conceptualising the ordering and enactment of the IIPP.

*The backdrop: postcolonialism, protection of Indigenous knowledge, and research ethics*

The development of the IIPP occurred through the backdrop and influence of three converging discourses. The postcolonial and anti-colonial questioning of research practices and epistemologies with/on Indigenous peoples; the protection of Indigenous knowledge associated with biodiversity; and the ethics of research practices involving human subjects.
Chapter One

In the first instance, the postcolonial and anticolonial critique has questioned the role that colonial history played in constructing Indigenous peoples, and research epistemologies and methodologies that Indigenous peoples were subject to (Coombes, Johnson, and Howitt 2012; Johnson et al. 2007; Rigney 1999; Sherwood 2010; Smith 1999; Spivak 1990, 1999). Postcolonial critiques of colonialism have provided the space for broader critiques of the influences of research practices on Indigenous peoples, and the ways that Indigenous knowledge and Indigenous people were placed in relation to the ‘West’ and ‘Western knowledge’ (Moore-Bilbert 1997; Spivak 1990, 1999). The creation of racial notions of the Western ‘self’ and the Indigenous ‘other’ were critiqued by postcolonial theorists in an attempt to destabilise the idea that the ‘self’ sat in the position of the powerful ‘core’ in relation to the disempowered ‘others’ on the periphery of the Empire (Jacobs 2002). Critiques of colonialism, based on an identity politics-of-difference, have created spaces for the ‘othering’ of research practices including questioning and re-placing concepts of knowledge. Through this lens Indigenous knowledge was placed in opposition to Western knowledge, with the former defined through relational 'Indigenous methodologies’ developed as a response to the recognition that despite the amount of research done on Indigenous peoples; researchers and institutions had done little to pass on the benefits of their research to these Indigenous communities (Smith 1999; Steinhaur 2002; Weber-Pillwax 2001; Wilson 2001). In an attempt to re-frame, re-claim and re-name the research endeavour (Martin 2002; Martin 2003), Indigenous methodologies sought ‘alternative ways of thinking about research processes’ based on the principles of relational accountability, respectful representation, reciprocal appropriation, and rights and regulation (Louis 2007:133). The push for Indigenous methodologies can be considered a part of the beginnings of the discourse of ethics that culminated in the establishment of Indigenous research ethics guidelines and protocols through higher education institutions.

In the second instance – protection of Indigenous knowledge associated with biodiversity – the emergence of global and localised discussion of ‘sustainability’ and ‘biodiversity conservation’ highlighted the major role that knowledge and knowledge holders/owners play in achieving both of these. Coupled with the re-definition of the economy as a ‘knowledge economy’ (Neef 1998), Indigenous peoples — seen as closer
to ‘nature’ — were positioned as a short-cut to access knowledge that could help achieve biodiversity conservation and generate profits for pharmaceutical and nutraceutical companies seeking to utilise plants in their products (Lotz 2002).

Indigenous knowledge, in the context of a global market economy, is exposed to the risk of ‘theft’ or misuse. With the increased interest in the environmental and economic value of Indigenous knowledge, Indigenous peoples have formed international conglomerations to petition the United Nations to respect their rights to self-determination¹. For example, the International Indigenous Forum on Biodiversity (IIFB), after forming in 1996 during the third Conference of the Parties to the UN Convention on Biodiversity (COP3-CBD) in Buenos Aires, has continued to influence international negotiations on access to biological diversity and associated traditional knowledge and equitable sharing of benefits (International Indigenous Forum on Biodiversity-Foro Internacional 2014). These negotiations, undertaken through the Ad Hoc Open Ended Working Group on Access and Benefit-Sharing (ABS-WG)² of the CBD, culminated in the development of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (the ‘Nagoya Protocol’) (Secretariat of the Convention on Biological Diversity 2011). The Nagoya Protocol was the outcome of six years of ‘incredible painstaking negotiations’ that was the ‘result of hard fought battles of the IIFB over every comma and word’ (Bavikatte and Robinson 2011:48). The Nagoya Protocol, and prior attempts to create standards for practice (such as the Bonn Guidelines (Secretariat of the Convention on Biological Diversity 2002), established international standards for accessing Indigenous knowledge associated with biodiversity.

International negotiations on biodiversity conservation and the protection of Indigenous knowledge were part of a wider discourse on ‘positive’ and ‘defensive’ protective mechanisms (Fourmile 1998; Fourmile-Marrie and Kelly 2000; UNU-IAS 2003; Van Overwalle 2005), occurring through academia as well as the United Nations World Intellectual Property Organisation (WIPO)(Dusollier 2011). Through this discourse, various options were suggested to ameliorate the risk of theft of Indigenous knowledge. Intellectual property rights (IPR), for example, were put forward as a tool (Brush and Stabinsky 1996) and philosophically justified on consequentialist and rights-based approaches (Merges 2011; Mossoff 2013; UNCTAD-ICTSD 2003).
Consequentialist justifications are based on the idea that society benefits when an author, artist or inventor is given exclusive rights to stop others reproducing or selling their work (Mossoff 2013; UNCTAD-ICTSD 2003). This approach assumes that granting exclusive rights encourages innovation (whether to invent, create new artworks, or written material), and that eventually the products of this innovation will be released into the public domain, which will increase the benefits to society (Merges 2011; UNCTAD-ICTSD 2003). Rights-based approaches, on the other hand, are based on the idea that ‘property in intellectual works is primarily a matter of justice rather than of public policy’ (UNCTAD-ICTSD 2003:30). This view sees unauthorised use of someone’s creative work or invention as unfair and thus illegal (UNCTAD-ICTSD 2003).

IPRs, built on the idea of private individualised property, however, were deemed by some to be ill equipped to deal with communally owned knowledge (Anuradha 2001; Posey and Dutfield 1996; Tobin 2001), and threatened the very basis of Indigenous and traditional knowledge management (Brush and Stabinsky 1996; Posey and Dutfield 1996). While others critiqued the use of IPRs because they create distinct spatial boundaries that position Indigenous knowledge within the public domain (Anuradha 2001; Laird and Noejovich 2002; Tobin 2001). To allay these fears proposals were made for the introduction of sui generis forms of intellectual property and legislative reforms (Daes 2001; UNCTAD-ICTSD 2003; UNU-IAS 2003; Van Overwalle 2005; Zerbe 2005); contracts, registers and databases (UNU-IAS 2003; Zerbe 2005); and ethical models for research, including guidelines, codes of ethics, and protocols (Argumedo et al. 2011; Bowrey 2006; Central Land Council; Gray 2004; Jonas, Shrumm, and Bavikatte 2010; Kimberley Land Council 2011; LPP and LIFE Network 2010; McDonnell 2004; Songman Circle of Wisdom 2004).

Ethical approaches to research on/with human subjects have been the other major influence on the development of protocols to protect Indigenous knowledge. The ethical approach to research emerged through the biomedical field in the form of The Nuremberg Code, which was an outcome of the Nuremberg Trials of 1946 that brought to light Nazi experiments conducted on Jewish people and ‘gypsies’ during World War 2 (Connolly and Reid 2007; Gorman 2011; Haggerty 2004). The Nuremberg Code was followed by the Helsinki Declaration in 1964 (Gorman 2011; World Medical Association...
National standards and guidelines for ethical research derive from four principles and obligations from The Nuremberg Code and the Helsinki Declaration. The four principles of respect for autonomy, nonmaleficence, beneficence, and justice stem from a range of theorists and frames including: Kant (autonomy), Rawls (justice), Mill (beneficence), and Gert (nonmaleficence)(Halse and Honey 2005).

Australia’s human research ethics followed the international developments in research ethics standards, with the establishment of the Human Research Ethics Committee (HREC) system to oversee the implementation of these standards. Under this system, research that involves humans and is undertaken through universities, or funded by the National Health & Medical Research Council (NH&MRC) requires ethical research clearance from a HREC (Commonwealth of Australia 2003:7). Research and researchers in this system must meet standards set by the Australian National Statement on Ethical Conduct in Research Involving Humans (NH&MRC Statement) principles and standards for research conduct (Commonwealth of Australia 1999a).

Given the history of research in Australia with/on Aboriginal and Torres Strait Islander people/s, the NH&MRC developed The Values and Ethics: Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander health Research (Commonwealth of Australia 2003). This outlined a framework of values and principles for undertaking research based on spirit and integrity; reciprocity; respect; equality; survival and protection; and responsibility (Commonwealth of Australia 2003). The NH&MRC’s values and ethics guidelines were modelled largely on the Guidelines for Ethical Research in Indigenous Studies developed by the Australian Institute for Aboriginal and Torres Strait Islander Studies (AIATSIS) (AIATSIS 2000). The AIATSIS Guidelines and NH&MRC Values and Ethics Guidelines establish a process, founded on ethics that seeks to redistribute power in research relationships and give some form of control of the research process to Aboriginal and Torres Strait Islander people/s. In this respect, research ethics draws on a variety of ethical frames that has implications for the enactment of ethics. The AIATSIS Guidelines published in 2000, were in place at the time the DKCRC was still in operation and when I conducted field research.

The introduction of research ethics in the higher education system in Australia has occurred amidst broader structural changes to the way universities, and cooperative
endeavors involving universities, operate. ‘The academic world is not what it used to be’ (Reid 1996:1) was an observation by Reid that the nature and role of research (particularly in universities) has increasingly been pushed in the direction of large bureaucratic enterprises by government and market forces (Commonwealth of Australia 2001; Marginson and Considine 2000; Miller 2000). There is a sense that universities have become a ‘hybrid beast’ (Miller 2000) and a ‘complex and contradictory thing’ (Ford 2002:2). This change is part of broader forces of the knowledge economy that has included the ‘massification’ of higher education, commercialisation, privatisation, and managerialism (Commonwealth of Australia 1996; Hearn 2004; Mirowski and Van Horn 2005). Human research ethics in this context—which has become part of the bureaucratic rationalism of universities and cooperative research endeavours—has become a form of ‘procedural ethics’ (Guillemin and Gillam 2004).

However, there is a growing body of knowledge that suggests that organisations, including universities and cooperative research centres, are influenced as much by relational order as they are by rationalism (Allen 2012; Bathelt and Gluckler 2011; Boggs and Rantisi 2003; Dépelteau 2013; Jones 2013; Sunley 2008; Tatli et al. 2014; Yeung 2005). Organisations, rather than bureaucratic ‘machines,’ operate as ‘organisms’ or networks (Castells 2010; Castells 2011; Castells 2004; Conti 1993; Cross 2003; Jarvenpaa and Tanriverdi 2003; Morgan 1990; Nohria 1992; Stalder 2006). Rather than actors acting only as rational beings in their own self-interest, some actors are motivated by the interest of others (Albanese, Dacin, and Harris 1997; Arthurs and Busenitz 2003; Davis, Schoorman, and Donaldson 1997; Hernandez 2008, 2012; Kuppelwieser 2011; Le Breton-Miller and Miller 2009; McArthur 2012; Preston 1998; Schillemans 2013; Van Slyke 2006). Given that actors do not follow rules in organisations rationally, including rules established through ethics, Guillemin and Gillam suggest that we should consider ethics-in-practice (Guillemin and Gillam 2004). Additionally, Martin and Inwood’s argument—that institutional ethics reviews create multiple subjectivities of institutions where moral authority is located, powerful dangerous researchers, and powerless participants—is helpful for exploring the contradiction of rational and relational order (Martin and Inwood 2012).
Explaining the problem, aims and questions

One of the difficulties with handling protocols, particularly for practitioners, is how do we, or how should we, evaluate their effectiveness for achieving a particular ethical or moral order? Do we judge protocols on what the best outcomes were and whether people were happy with them (consequential/utilitarian), or on how effective the process was (deontological)? Normative ethics is replete with arguments on how to do this. I don’t seek to answer this question in this thesis, nor do I think that this is something that I have the space to tackle here; but normative ethics provides the basis through which we can begin such considerations. Chapter Five delves superficially into some of the deliberations in normative ethics.

Protocols, based on anxieties about the ownership and control of Indigenous knowledge, are introduced to overcome the ‘theft’ of Indigenous knowledge. In some instances, protocols are introduced as part of an ethical response to research, which is mediated, in part, through organisational research ethics committees. Yet, very little empirical research has been undertaken that explores how protocols – introduced to protect Indigenous knowledge – order practices. We know anecdotally that protocols are not always followed. As Carter (2010) notes, when protocols are not ‘upheld’ or ‘respected’ they become useless. Protocols do not exist in isolation of human actions or practices. How then, can protocols and the action of actors – who do not ‘uphold’ or ‘respect’ them – be conceptualised and theorised?

While there has been significant focus and critique of the other measures proposed to protect Indigenous knowledge; the suggestion that protocols can perform a similar role has not been followed with the same level of critical analysis. Turnbull suggests that ‘[t]here are two key challenges for the future of IKs—establishing the protocols by which IKs define themselves and control their own autonomy, and enabling the commons to be resilient in the face of appropriation in the global knowledge economy’ (Turnbull 2009:4). Protocols to protect Indigenous knowledge appear to have been drafted and introduced to various situations and locations (Australia Council for the Arts 2007a, 2007b, 2007c, 2007d; Songman Circle of Wisdom 2004; Tangentyere Council 2000) with limited analysis of the organisational contexts in which they are introduced and are expected to operate and the individuals who are expected to enact them. It is a naive expectation, I believe, that we can introduce protocols into
organisations and expect that they will be enacted routinely. This relies on an assumption that all actors hold the same definition or understanding of knowledge, and will enact protocols rationally.

This thesis, therefore, seeks to explore ‘how protocols order research practices and knowledge’ and ‘how organisations and individuals enact protocols’. To answer these questions I draw on a large body of literature and a case study. Through the literature review I aim to explore how protocols have been conceptualised in a variety of fields including in Indigenous research, laboratories, medical practices, courts and computer networks. The broader field of protocol analysis is still in its infancy. Therefore, casting the net widely provides opportunities to draw on ideas or concepts of protocols in one field of research that may assist with exploring another. For example, computer science discussions on computer protocols or medical protocols may prove fruitful for unpacking and exploring Indigenous protocols.

Additionally, I aim to explore how organisations, the focus of the case study in this thesis, are conceptualised through theories of bureaucracy, the firm and post-bureaucratic organisations. I also aim to explore how actors are conceptualised and theorised in organisational contexts. The focus on theories of organisations provides further scope to unpack differing types of enactment in organisational contexts by actors, and how this might influence how organisations and individuals enact protocols. Lastly, and with less emphasis than the former two aims, I aim to dip briefly into ethics as a means for providing an initial roadmap for further research that could specifically look at the ethical foundations of protocols.

**The case study**

This thesis uses a case study approach, focused on a particular organisational protocol, as an ethnographic study to explore the ordering and enactment of protocols in organisations. The ‘Indigenous Intellectual Property Protocol’ (IIPP) was a protocol established and enacted by the Desert Knowledge Cooperative Research Centre (DKCRC). The DKCRC was an Australian federally funded research institute which began operations on 1 July 2003 and ceased operations on 30 June 2010 (Desert Knowledge CRC 2010a). Its vision was ‘thriving desert knowledge economies sustaining Australia’s inland environment’ (Desert Knowledge CRC 2010a). DKCRC was
established on the recognition and assumption that people living in desert environments, Aboriginal and non-Aboriginal, have different livelihood needs based on their location, but also possess different knowledge bases and requirements to coastal communities. DKCRC problematised coastal-desert divisions in policy-making and service delivery, and attempted to bring to light the role of place in policy and research.

The DKCRC was the first Cooperative Research Centre (CRC) to establish a protocol specifically aimed at recognising Indigenous rights to knowledge in the contexts of research commercialisation. The DKCRC’s IIPP, which was introduced at the conception of the DKCRC as part of the DKCRC Centre Agreement, sat alongside a number of other written protocols in Australia that attempted to provide equity, guidelines and best practice models for research, development and commercialisation of Aboriginal knowledge in the arts, education and pharmaceutical industries. The IIPP included was broken up into the three main sections of purpose, philosophy and practices. The ‘practices’ section was the most substantive part of the protocol and included the eight practices of: ethics, practice, collection of Indigenous IP, use and storage of information, confidentiality, commercialisation, commercial benefits, and continual improvements (Appendix 1).

The case study had both a practical and a theoretical aim. Through working with the DKCRC, the practical aims of the case study were to critique the IIPP; find its strengths and shortcomings; ensure that the protocol was flexible enough to meet the needs of individual communities; and a means for recommending amendments to the protocol. The theoretical aims of the case study were to gain an understanding of how protocols order research practices and Indigenous knowledge in research networks and collaborations, and from there develop a theory of protocol enactment in organisational contexts. Theoretically, the case study is used to advance an understanding of how protocols order research practices and Indigenous knowledge in collaborations and research networks, and on this basis develop a theory of protocol enactment in organisational contexts. The boundaries of the case study were constructed around both the DKCRC and the IIPP because of these dual aims. The practical aspects of making recommendations were shared with the DKCRC to assist them with improving their protocol. They do not appear here chiefly because the focus of this thesis is theoretical rather than practical.
**Ordering rather than operationalisation of protocols**

In the context of seeking to explore ‘how protocols order research practices and knowledge’, I look closely at the entities that constitute protocols and make up the relations. To assist with this ‘unpacking’ I use the notion of assemblage, borrowed from the work of Deleuze and Guattari (Deleuze and Guattari 1987). To indicate associations with assemblage thought I use the shorthand phrase ‘protocol-as-assemblage’. Assemblage thought is explored in further detail in Chapter Three.

I focus on ‘ordering’ rather than ‘operationalisation.’ Protocols are elusive because they operate when people are engaged in practices such as negotiating research agreements with a community, or making decisions on how to store Indigenous knowledge. Therefore, the observation of their operationalisation in practice requires being in the field observing someone while they are working, and then attributing their practices to a particular type of utilisation of the given protocol. This is an invasive research method and was not one that I chose to utilise. It is also incredibly difficult to attribute particular practices or actions to the enactment of a protocol at the time of observation without asking a large number of questions. This method requires a level of reflexivity and questioning that is potentially invasive.

Given my method of study — interviewing people and studying documentation for the Desert Knowledge CRC — I can say something about ‘ordering’. Ordering, as I understand it, is about directing and patterning. I do not need to observe in practice actor’s use of protocols to understand or infer ordering. I can see, from the written documentation what type of directive actors are given, from these directives, and the responses from interviews, I can infer what kind of patterns emerged as actors’ enacted protocols. As I explore further in Chapter Two, protocols have been examined in various contexts such as Indigenous research, laboratories, medical procedures, courts and computer networks. In each of these instances, the protocols themselves, rather than their observation in practice, have been examined. Lynch, for example, explores protocols as recipes (Lynch 2002). Through the notion of recipe, Lynch considers the mechanisms of protocols and how they themselves order practices’ (Lynch 2002).
The typology of ‘characters’: gatekeepers, guardians and gatecrashers

The directing and assembling of research practices and Indigenous knowledge is complex and non-linear. Because of this, the characteristics of gatekeeping, guardianship and gatecrashing might be a useful typology for considering how protocols order practices and knowledge. Let’s again consider the scenario outlined at the beginning of this chapter. Imagine that an Indigenous person has shared their knowledge with the researcher. The knowledge is of value to the person sharing it and the researcher entrusted with it is requested not to share it with others. The researcher who has received the knowledge has before them a number of options, which can be described through the gatekeeper, guardian and gatecrasher typology.

I developed the gatekeeper, guardian and gatecrasher typology to act as a conceptual tool to assist with exploring how protocols are enacted to protect Indigenous knowledge, and how protocols order these practices. Drawing from three bodies of literature, the typology drew on the notion of ‘gatekeeping’ in media and communication studies, the notion of ‘stewards’ in organisational studies, and the notion of ‘hackers’ in information and computer studies. The next three paragraphs provide a brief overview of these notions.

Gatekeepers choose to adhere to protocols. These protocols will direct gatekeepers to consider the nature of the knowledge with which they have been trusted to examine it and see if the knowledge is of the kind to which the protocol ought to apply. This conceptualisation of gatekeeper (and the process of gatekeeping) borrows heavily from media studies conceptualisation of ‘gatekeeping’ as part of a process of selecting articles to publish in a publication (Barzilai-Nahon 2008; Rosengren 1997; White 1964). Gatekeeping is a process undertaken to determine what ought to be published and what should be discarded. It has been used elsewhere as a term to refer to the process of ‘filtering’ (Kavelin 2008). When the knowledge has been filtered the person has the choice to act in his or her own self-interest or in the interest of others. The notion of gatekeeper used in this thesis also draws theoretically upon Weber’s ideas of the bureaucratic ‘machine’ (Weber 1968), and the concept of agent-principle posited by transaction cost theory and agency theory in microeconomic theories of the ‘firm’ (Coase 1937; Demestz 1967; Jensen and Meckling 1976). Both Weber’s bureaucratic
‘machine’ and the agent-principle concept are based on an assumption of utilitarianism in which agents will act in their own self-interest in attempting to generate the greatest possible wealth (Davis, Schoorman, and Donaldson 1997; Sundaramurthy and Lewis 2003). To a certain extent, at least when initially faced with protocols to protect Indigenous knowledge, most actors will enact protocols as gatekeepers.

Guardians choose to adhere to protocols. While initially enacting gatekeeping (questioning if the information is valuable), they may consider keeping the knowledge out of interest for the other person, rather than based on a motivation of self-interest. The notion of guardian used in this thesis draws upon the steward-principal concept in organisational studies, which is a critique of the agent-principal concept of self-interested individuals (Davis, Schoorman, and Donaldson 1997; Hernandez 2012).

Gatecrashers, in some ways, are comparable to computer ‘hackers’ in computer networks who — although encompassing a wide range of ethical stances — circumvent protocols for a variety of reasons, including the belief that information ought to be free (Coleman and Golub 2008; Coleman 2013; Décary-Hétu and Dupont 2012; Ezekiel 2013; Galloway and Thacker 2004). Actors may also be considered as gatecrashers when, perhaps due to a lack of understanding of the existing property rights regimes that are a part of Indigenous knowledge, gain unauthorised access to Indigenous knowledge. Because the term ‘hacker’ has particular application in computer networks, the term has limited application here. However, in general language, at least within Australia, the term ‘gatecrasher’ captures some of the ideas discussed in the hacker literature.

The gatekeeper, guardian and gatecrasher typology is reminiscent of typologies established by Stirrat (2008) and Turnbull (2000). Stirrat used the ‘mercenaries, missionaries, and misfits’ typology as an ‘entry-point for exploring the tensions and contradictions in ways in which people in the industry view themselves’ (Stirrat 2008:407). Turnbull (2000) used the ‘masons, tricksters, and cartographers’ typology to explore disjunction and similarities of local and scientific knowledge. Any semblances and differences between the typology I propose, and those presented by Turnbull and Stirrat are discussed in further detail in Chapter Seven.
Protocols, as stated earlier, order along two axes: the organisational and the individual. Because of this, it is important to pay attention to how the organisational and individual aspects influence the definition of knowledge, and the enactment of protocols. Firstly, actors’ definitions of knowledge influence how protocols are enacted. Knowledge, I argue in this thesis, sits as an assemblage. This is a similar, although slightly different, to the proposition proposed by Sillitoe (Sillitoe 1998) who argued that ‘it is not particularly helpful to contrast Indigenous knowledge with science. We are not talking about two tenuously connected knowledge traditions separated by a cultural-epistemological gulf, but rather a spectrum of relations’ (Sillitoe 1998:1). Where Sillitoe’s ‘knowledge continuum’, discussed in Chapter Two, moves between local Indigenous knowledge to global scientific understanding. In contrast to Sillitoe, the ‘knowledge assemblage’ I propose posits that knowledge includes rational and relational approaches. From this assemblage actors employ a definition of knowledge that moves between the realms of disembodied rational capital, to an embedded relational element. Actors dominated by self-interest enact protocols (knowingly or unknowingly) to support a rational order. Likewise, actors dominated by the consideration of others enact protocols to support a relational order. Rather than outright resistance to protocols, subversion becomes the means through which protocols are enacted to meet the needs of the actor, rather than the intended outcome of the protocol. Because of this, protocol enactment is not uniform, it is disjointed and messy.

Organisations are not clean slates. They come with histories, internal and external conflicts, existing relationships and alliances, ‘brands’ and their own organisational stories. These influence how protocols are perceived in a broader context. Because protocols are an attempt to instigate routine behaviour through standards and regulations, the organisational context is important. For instance, if an organisation establishes research protocols around Indigenous research, but has no, or few, Indigenous researchers employed in their organisation, then this is likely to influence how the protocol is likely to be perceived. Low employment level of Indigenous researchers could be perceived by some as a low commitment to an Indigenous research agenda, which is likely to destabilise any attempt to institutionalise protocols. I pick up on the contextual influences of organisations in Chapter Eight where I analyse/critique the influences of organisational branding and narratives on the positioning and interpretation of protocols. These factors make the study of protocols both interesting
and complex. The remainder of the chapter outlines the theoretical and conceptual terrain that influences this thesis.

**Assembling the theoretical and conceptual terrain**

The following section provides a brief overview of the theoretical and conceptual terrain that informs this thesis. In some sections, for ease of moving through the themes and the bodies of literature, they are presented in a narrative form to provide a picture of what the terrain looks like. I do not mean to make definitive statements on the cause and effect of particular events through the narration that follows.

*Emergence of protocols as a field of analysis*

When I began this study the theoretical literature on protocols was scant but now the situation has slowly begun to change. This thesis draws on protocols established to protect Indigenous knowledge (Argumedo et al. 2011; Australia Council for the Arts 2007a, 2007b, 2007c, 2007d; Community Cultural Development New South Wales 2003; Haswell et al. 2009; Shrumm and Jonas 2012) and critical literature on protocols developed to protect Indigenous knowledge (Anderson 2010; Bowrey 2006; Carter 2008, 2010; Garwood-Houng 2005; Gray 2004; LPP and LIFE Network 2010; McCausland 2006; McDonnell 2004; Nakata et al. 2005a, 2005b; Yang 2010). Protocols are variously defined in this literature as: rules (Carter 2010; Community Cultural Development New South Wales 2003); standards (Nakata et al. 2005b); prescriptive tools that prescribe particular types of behaviours (Bowrey 2006); appropriate ways of communicating and working with others (Janke 2012); acceptable practices (Janke 2012); rules of engagement (Carter 2010); and rights based approaches to affirm self-determination (Jonas, Shrumm, and Bavikatte 2010). The role that each actor plays is seldom theorised, and the very institutions and organisations in which protocols are supposed to be implemented sit distantly in the background, or if referred to are considered on the macro, rather than the micro, scale. The work by Carter, who found a number of themes relating to the utilisation of protocols including the need for: coordinated participation; cultural awareness activities; scrutiny of agreement making and representation; and the implication for conducting place-based Indigenous engagement, is a notable exception (Carter 2008, 2010).
I draw heavily upon the work of Galloway and Thacker (Galloway and Thacker 2004; Galloway 2004) whose post-structural analysis of protocols in computer networks provides a useful starting point for critically analysing and conceptualising protocols. Galloway and Thacker posits that protocol is a system of management and controlling logic; facilitates relationships between ‘autonomous entities’; is more about control than power; operates outside ‘Institutional, governmental and corporate power’; and amongst other things ‘is based on a contradiction between two opposing machines, one machine that radically distributes control into autonomous locales, and another that focuses control into rigidly defined hierarchies’ (Galloway 2004:142). This contradiction, as Lozano argues, is constituted through control and freedom that should be understood as two sides of the same coin (Ortega Lozano 2009). Galloway’s highway system analogies (which I refer to as protocol-as-road rules) and communication analogies (which I refer to as protocol-as-telephone conversation) are useful conceptualisations to explore and understand protocols. I oppose, however, one of Galloway’s propositions made through his theory of protocols. Rather than operating outside of ‘institutional, governmental and corporate power’, protocols order through them. I explore the organisational context of protocols in further detail through Chapters Four, Five, and Six.

Galloway explores resistance to, and the enemy of, protocols through the lens of ‘hacking’ and the ‘hacker’ to argue that ‘to live in the age of protocol requires political tactics drawn from within the protocological sphere’ (Galloway 2004:151). I draw on the idea of the ‘hacker’ as ‘moral expressions’ (Coleman and Golub 2008; Coleman 2013; Woo, Kim, and Dominick 2004) of ‘resistance’ to protocols to draw out the argument that while protocols order research practices and knowledge, there are instances where the directive nature of protocols appear out of reach of some practices. This is discussed in further detail in Chapter Six through the notion of the ‘gatecrasher’.

I am also theoretically influenced, in part, by the analysis of protocols in laboratory contexts which — drawing on the idea of the ‘recipe’ — conceptualises ‘protocol-as-recipe’ (Berg 1998; Lynch 2002); and the analysis of protocols in court systems which conceptualises ‘protocols-as-chain of command’ (Staller 2010). These are explored in further detail in Chapter Two.
Despite the expanding number of protocols to protect Indigenous knowledge, and the emerging body of literature springing up in its shadows, the ideas emerging from the study of computer protocols, protocols in laboratory, and protocols in court proceedings is yet to make its mark in the field of research protocols. This thesis utilises emerging thought on protocols to provide insights into how protocols order research practices.

**Theories of bureaucracy, the firm, and post-bureaucratic organisations — and the use of branding and story-telling**

Guided by the case study on a protocol developed by a CRC, I was orientated by the organisational theories of bureaucracy, the firm and post-bureaucratic organisations. To explore the rational aspects of protocols I draw heavily on Weber’s theory of rationalisation, — as conceptualised through the ‘bureaucracy’ and the bureaucratic ‘machine’ — to explore rationality as the ideas of standardisation, self-interest, and control and command (Adler and Borys 1996; Casey 2004; Jenkins 2000; Waeraas 2007; Weber 1958, 1968; Weibel 2007). From theories of the firm I use agency theory to explore the way that contracts are used as a coordinating mechanism in organisations, and the way that assigning property rights influences coordination (Coase 1937; Demestz 1967; Jensen and Meckling 1976). I employ the ‘machine’ metaphor, as introduced by Weber (1968), as a tool to highlight the standardisation and calculability associated with rationalisation.

To explore the relational aspects of protocols, in Chapter Two I dip into theories on post-bureaucratic and relational organisations. This includes a brief foray into the literature on the ‘network organisation’ (Ruigrok et al. 1999) and the ‘virtual organisation’ (Butera 2000; Conti 1993; Hughes et al. 2001; Jarvenpaa and Tanriverdi 2003; Reimer and Klein 2008), the network society (Castells 2010; Castells 2011; Castells 2004) the post-bureaucratic organisation (Heckscher 2012; Reed 2011) and relational theories more generally (Allen 2012; Bathelt and Gluckler 2011; Boggs and Rantisi 2003; Dépelteau 2013; Jones 2013; Sunley 2008; Yeung 2005). I also draw conceptually on the steward-principal concept, which critiques agency theory (the agent-principal concept), to explore the idea that actors perform out of motivation and the interest of others (Albanese, Dacin, and Harris 1997; Davis, Schoorman, and Donaldson 1997; Hernandez 2012; Le Breton-Miller and Miller 2009; McArthur 2012; Sundaramurthy and Lewis 2003; Van Slyke 2006; Wolfson 2012).
Through the exploration of the relational aspects of protocols I include references to literature that specifically examines the management and operationalisation of CRCs (Harman 2002, 2004; Turpin 1997; Turpin and Garrett-Jones 2010; Turpin, Garrett-Jones, and Wolley 2011). However, this literature has limited engagement with the use of protocols in research organisations to protect Indigenous knowledge. This thesis makes a qualitative contribution to studies on Australian CRCs. To capture some of the ideas associated with relational views of organisations, I outline briefly the notion of ‘organism’, but opt instead to use the term ‘ensemble’ to account for both the parts and the whole of organisations. I draw from the musical definition of ‘ensemble’ to conceptualise the relational aspects of groups of actors who ‘perform together’, or ‘play with appropriate balance and well co-ordinated articulations’ (Randal 2003:295). While I’d like to claim novelty for referring to aspects of organisations as an ‘ensemble’, after some research I discovered that others had beat me to the metaphor (Heywood, Bilton, and Cummings 2014).

The DKCRC used ‘The Desert Knowledge Story’ and the ‘desert knowledge’ brand as rhetorical tools for projecting an image of deserts as places ‘remote’ from the influence of decision-making, yet subject to the policies made by those at the ‘centre’ of power located on the coastal fringes (Desert Knowledge CRC 2004). This is part of an historical narrative in Australia that portrays control and power in the desert in relation to workings of the State. Because of the influence of both branding and story-telling in the DKCRC I explore, through Chapter Eight, how these entangled the IIPP. As Boje argues, the ‘storytelling organization is about how people and organizations make sense of the world via narrative and story’ (Boje 2008:4). Stories are part of the sense making process (Gabriel 1998). In the context of the DKCRC ‘The Desert Knowledge Story’ was a deliberative device employed as part of their branding strategy, but stories, as Gabriel argues, ‘are not the only things that generate and sustain meaning, nor indeed do all stories generate and sustain meaning – some stories may actually undermine and destroy meaning’ (Gabriel 2000:5). I discuss this idea in Chapter Seven in discussions about branding through the ‘desert knowledge’ story. There I argue that ‘The Desert Knowledge’ Story’ in parts destroys the meaning of Indigenous knowledge by subsuming it into a hierarchy or knowledge with ‘desert knowledge’ as the top of the hierarchy, and Indigenous knowledge as sub-ordinate to it.
The ‘outsider within’ identifying a possible place: my relationship with Desert Knowledge CRC

I learnt of the Desert Knowledge Cooperative Research Centre’s ‘Indigenous Intellectual Property Protocol’ through a chance meeting with one its ‘theme leaders’ at a conference in Egypt. The decision to take on this case study was based on the reported need to review the protocol, and my own personal desire to undertake a project that I perceived could have future implications for the recognition of Indigenous rights to knowledge in university and commercially based research. My positioning in the case study was challenging in two distinct ways.

I position myself, and was positioned by others in the research as an ‘Aboriginal woman’. My cultural links to ‘Yamatji’ and ‘Nyoongar’ peoples of Western Australia was a significant factor in this positioning. Despite the fact that the DKCRC headquarters was in the desert (in particular Alice Springs), where my cultural heritage is also located; this region of the Australian desert is geographically removed from my own ancestral lands, and thus was a place where I felt I had limited cultural connections. That fact brings to the surface internal conflicts for me as a Yamatji-Nyoongar and non-Indigenous woman undertaking ‘research’. Alice Springs is not my ‘home’, it’s not my country and my relationship to this place is as a visitor. That is, I don’t have a right to ‘speak for country.’ This reality may not seem worthy of mention in research, but as a scholar who resided in a coastal region away from Alice Springs, and as a Yamatji-Nyoongar and non-Indigenous woman, this gnawed away at me throughout the research. At times it came in the form of questions as though being asked by another person, ‘what right do you have to be here? Shouldn’t you be helping your own people?’ Indeed, in one instance while at a seminar in Alice Springs, one of the local women specifically asked me why I wasn’t working with ‘my mob’. And, as I discuss in Chapter Seven, this positioning and questioning informed how I viewed the enactment of protocols.

While undertaking a research study of the IIPP, I was also a PhD student on an industry scholarship (a top-up scholarship) funded by the DKCRC. I was ‘paid’ by the organisation that I was attempting to critique. Being funded by an organisation to undertake research, or an inquiry, into their practices and philosophies is an overly difficult political and emotional situation. This was made painfully obvious through two
incidents involving a member of senior management in the DKCRC in which my research findings and my approaches were critiqued in two separate incidents. I briefly share my own experience of these critiques to explain how this ‘event’, along with others, helped in the formation of a theoretical framework and my own positioning in the research. The critiques by a member of the DKCRC senior management team were levelled at the style of interview questioning, use of language in positioning DKCRC, and comments on preliminary research findings. While I’m not an adversary of ‘critique’ — and particularly concerning research methods and findings — at the time I felt that they had been delivered in a manner inconsistent with research etiquette. While I have been able to communicate directly, and indirectly, with senior management and to work through some of my own grievances, the ‘event’ highlights the overly political (and emotional) nature of research, and how to re-present research findings that will not be positioned as ‘biased opinion’. Given my own self-identity as *inter alia* an ‘Indigenous woman researcher’, the known conflict between myself and a member of senior management by other managers in DKCRC, and the nature of the research – a critique of an Indigenous intellectual property protocol — there seemed every possibility that my critique of the organisation would be listened to and possibly accepted as ‘truth’; but it could also be just as easily dismissed as a ‘fiction’, or tied to a story about the vendetta of an angry Aboriginal woman.

My positioning in the research is multiple, mobile and at times contradictory. I place myself, and am placed by others as the ‘outsider within’ (Carty 1991), and the ‘stranger’ (Simmel 1921:322-327). Importantly, it resonates with Heald’s argument that, ‘we cannot assume a singular subject position, nor can we replace one with another at will’ (Heald 1991:141) and with Weiler’s observations of the:

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\text{[R]ealization that ‘reality’ is socially constructed has led to a much more explicit recognition that the cultural location and hence, the normative dispositions, of the ‘observer’, is a constitutive element in the process of knowledge creation, and that the results of that process unmistakably reflect these contingencies} \quad (\text{Weiler 2001:30}).
\]

The remaining sections of this chapter explain and justify the questions asked in this thesis, and provide an overview of the structure of the thesis.
A Fugue: form and process of the thesis

This thesis mimics the structure of a fugue, a technique used in music, and theorised in Western classical music composition. Composers such as Johan Sebastian Bach and Amadeus Mozart used the fugue as a technique to introduce a theme, and then build on it and explore it (Bent 1994). Although I’d like to claim this approach as a unique approach to exploring ideas in this thesis, others have used it in literature (Zimmerman 2002) as ‘fugal critical analysis’ (Skilbeck 2011, 2012), and ‘contrapuntal’ analysis (Said 2000). ‘In a fugue, the first voice enters playing the main theme […] called the subject, the second voice enters, perhaps a few measures afterwards, and takes that same subject, but modifies it by starting on a different note. The modification in the second voice […] is called the answer’ (Chowdhry 2007). As well as this form of a fugue, others have argued that fugues can also include – as well as the theme and answer – an exposition, counterparts, and episodes (Mann 1987). The fugal analysis method is used to introduce the themes of rational and relational order and then to revisit and re-examine the themes again in each of the chapters.

In Chapter Two I explore approaches to protocols, bureaucratic and post-bureaucratic organisations, and actors in organisations that I consider in greater detail in subsequent chapters. I introduce the metaphors of protocol-as-guides, protocol-as-recipe, protocol-as-road rules and protocol-as-telephone conversations to explore how protocols have been conceptualised in other fields. I suggest that these conceptualisations of protocols provide a useful template for comparing and exploring protocols across differing fields. I present an exploration of theories of organisations and I suggest that they exist as a dynamic tension between rational bureaucratic ‘machines’ and relational ‘organisms’. In the later part of Chapter Two, I introduce the traits of ‘stewards’, ‘gatekeepers’ and ‘hackers’ and infer that actors in organisations are motivated by altruism and self-interest.

Chapter Three provides an overview of the plan inquiry for the thesis and the methodologies used in the thesis. I introduce assemblage thinking and suggest that treating protocol-as- assemblage allows a closer examination of the entities that make up protocols, and how they order research practices and Indigenous knowledge. I momentarily revisit the ‘machine’ and ‘organism’ metaphors, and introduce the ‘ensemble’ as an alternate metaphor to the ‘organism.’ I suggest that the ‘ensemble’
metaphor more easily allows for a discussion of relational ordering. Through Chapter Three, I situate the thesis as a practice based examination of protocols and provide conceptual clarity to the notion of entanglement. I suggest that entanglement is a conceptual tool used to change focus in an assemblage and moving between entities. I provide an overview of how Indigenous knowledge is defined by others as situated knowledge, including relational obligations, and is places in the margins in opposition to Western knowledge and science. I argue that rather than a dichotomy, that both Indigenous knowledge and Western knowledge are assemblages of rational and relational knowledge, and protocols are one kind of expression of these assemblages.

The last part of Chapter Three provides a brief introduction of the case study, a protocol established by a cooperative research centre to protect Indigenous knowledge.

Chapter Four introduces the DKCRC case study more fully and explores how efficiency and standardisation (rational order) was embedded in the organisation through the management and governance structure of the organisation. I consider the DKCRC Board as an entity of the DKCRC which performed as a ‘machine’ and an ‘ensemble’ in overseeing the governance of the DKCRC and the IIPP. I explore the existence of rational order through an examination of how the actors became DKCRC actors, and the way that standard legal contracts were used to create the conditions for DKCRC actors and the IIPP to operate as part of the DKCRC network. I consider how accounting mechanisms, such as in-kind support, contributed to a ‘machinic’ and an ‘ensemble operation of the DKCRC. In the later part Chapter Four, I examine how the DKCRC ordered and placed knowledge and research in the desert. I suggest that the DKCRC geographically ordered knowledge in relation to the desert as remote region of Australia that was considered as the ‘backyard’ of the States and Territories. I also suggest that the DKCRC legally and economically ordered Indigenous knowledge through the application of the standard category of ‘Indigenous intellectual property’ to Indigenous knowledge.

Chapter Five maps the IIPP as a protocol-as-assemblage. I suggest that the IIPP’s three main functions were to provide a set of rules for engagement, assigning property rights to knowledge, and contributing to broader benefits for Indigenous people/s. Through Chapter Five I suggest that the IIPP was based on mix of ethical frames and argue that the IIPP was based on contractarian ethics because it was developed and implemented
as a part of suite of DKCRC agreements. I contend that the IIPP was based on consequentialist and rights-based ethics because it embedded the ‘Indigenous intellectual property’ category embedded which sought to provide certainty through an individualised form of property rights to knowledge owners in order to encourage innovation, and to ensure equitable research relationships. I suggest that the IIPP was based on deontological ethics because it established the ‘rules of engagement’ for DKCRC actors who sought to access, use, store or commercialise Indigenous knowledge.

Chapter Six explores suggestion that the IIPP functioned as a set of rules for engagement. I introduce ‘procedural ethics’ — as an entity of the IIPP — which created both rational and relational ordering of practices and Indigenous knowledge. The use of an ethics research application creates the rational ordering, while the requirements to consider how the research impacts on Indigenous peoples creates relational ordering. The second half of Chapter Six introduces ‘ethics-in-practice’ to explore how the autonomous actions of researchers, influenced by the IIPP, orders practices and Indigenous knowledge relationally.

Chapter Seven explores how protocols are enacted in practice. I introduce a typology of modes of enactment and suggest that actors in the DKCRC enacted the IIPP as gatekeepers, guardians and gatecrashers. Through these notions I explore the way that the IIPP was used as a ‘filter’ to discern ‘Indigenous intellectual property’, and the role that actors play as ‘switchmen’ in controlling this filter. Both of these aspects are considered as gatekeeping practices. Drawing on findings from discussion on ‘ethics-in-practice’ I examine how the autonomy of individuals influence how protocols order practices and Indigenous knowledge in ways that resemble guardianship. Lastly, I explore the notion of gatecrashing by drawing on theories of ‘hackers’ resistance to, and circumvention of protocols.

Chapter Eight explores how the IIPP became entangled in ‘The Desert Knowledge Story’ and the ‘desert knowledge’ brand, which created confusing narratives of what Indigenous knowledge is, and how it ought to be positioned in light of the IIPP. I suggest that the ‘desert knowledge’ brand and The Desert Knowledge Story positioned the desert as the ‘backyard’ of the States (entanglement 1). This positioning emphasised
the relationship of people to the State and placed desert people as ‘remote’ from their ‘homes’. I suggest also that ‘desert knowledge’ established a hierarchy of knowledge that subsumed Indigenous knowledge and ‘Indigenous intellectual property.’

In Chapter Nine I provide my story of leaving the field as a way of highlighting my own experiences of rational and relational ordering through the DKCRC. The thesis concludes with suggestions made by DKCRC actors, some parting thoughts on the application of assemblage theory to protocols, and suggestions for further research on protocols.
Chapter One
Chapter Two. Organising Actors: mapping the organisational terrain.

Introduction

Drawing from a wide field of literature, this chapter aims to give a theoretical overview of the ways that organisations, protocols and actors have been conceptualised. I explore how protocols have been defined and conceptualised in relation to Indigenous activities, laboratories, medical practices, courts, and computer networks. Through these contexts, I investigate the conceptualisation of protocols as etiquette, guides, recipes, and road rules. Through Galloway’s (2004) work on protocols in computer networks, I direct attention to the characterisation of protocols as a contradiction between two machines: one that distributes control into autonomous locales, and the other that focuses control into hierarchies. I explore the ways that organisations, through the fields of organisational and management studies, are considered as ‘machines’ of rational order on the one hand, and as ‘ensembles’ of relational order on the other. I sketch how consequentialist, rights-based, contractarian, and deontological ethics inform rational and relational theories of organisations. I conclude by mapping some of the ways actors in bureaucratic, post-bureaucratic organisations and computer networks have been conceptualised as hackers, stewards, agents, and gatekeepers. Through this mapping exercise I direct attention to the conceptualisation of actors as either self-interested or those who act in the interest of others.

Protocols: appropriate behaviours, instructions, and contradiction

As Stalder argues, borrowing from Castells, ‘the key concept in grasping the new constitution of power […] is the protocol’ (Stalder 2006). There is an emerging body of literature across a variety of disciplines dedicated to the analysis of protocols (Anderson 2010; Berg 1998; Bowrey 2006; Carter 2008, 2010; Faraj and Ziao 2012; Galloway 2004; Garwood-Houng 2005; Gray 2004; LPP and LIFE Network 2010; Lynch 2002; McCausland 2006; McDonnell 2004; Nakata et al. 2005a, 2005b; Raven 2010; Staller and Faller 2010; Yang 2010). The term ‘protocol’ is ubiquitous thus making it extremely difficult and time-consuming to find studies that critically analyse protocols, rather than just describe them, or make calls for their introduction. Locating material that critically
analyse protocols was done serendipitously as well as through a methodological process of trying different combinations of words in numerous database search engines. Galloway’s book (Galloway 2004) for example, was discovered on a ‘sale’ desk at a bookshop, the analysis by Fajar and Ziao (2012) was uncovered while scanning a book for articles on bureaucracy, the study in the edited book by Staller and Faller (2010) was discovered while undertaking contract research for a Royal Commission into Institutional Responses to Child Sexual Abuse, and the book section by Berg (1998) was found when I misspelled ‘molecular’ while searching for articles associated with the article by Lynch (2002). This shows that anyone studying protocols needs to be inventive with search terms, cast the net wider than they think, and be willing to consider covering protocols in a broader area. In this section, while including a few studies from across a number of disciplines, I do not attempt to provide an exhaustive coverage of the literature, for the reasons outlined. Protocols, at least sociologically, are not just stock standard rules. They are developed for particular purposes, contexts, processes and outcomes for a given set of actors. Therefore, and this is something that I am unable to test in this thesis, the location of protocols, the reasons for their development, and the actors who will be affected by them are important factors in any ‘protological’ (Galloway 2004) study.

Indigenous non-medical practices: protocol-as-etiquette, protocol-as-guide

Through the field of Indigenous research, protocols have been variously described across the literature as rules or rules of engagement; appropriate ways of behaving and communicating and working with others; standards; prescriptive tools that prescribe particular types of behaviours; acceptable practices, rights based approaches to affirm self-determination; agents of change; a form and source of private law; a guide to good practice, and a model of best practice (Australia Council for the Arts 2007a, 2007b, 2007c, 2007d; Bowrey 2006; Carter 2010; Community Cultural Development New South Wales 2003; Dunbar and Scrimgeour 2005; Garwood-Houng 2005; Janke 1998, 2012; Jonas, Shrumm, and Bavikatte 2010; Nakata et al. 2005b). This literature appears to broadly define protocols in terms of etiquette or as a guide to appropriate behaviour. The idea that protocols are akin to guides (or social etiquette) highlights, I think, both rational and relational order. Etiquette includes standardised ways of behaving, yet allows flexibility in how this applies in practice between two or more entities. Deontological ethics underpins the idea that protocols are guides, or indeed social
etiquette, because it is concerned with the process of engagement, rather than just the outcome.

While considered attention has been given to establishing Indigenous protocols and outlining the principles, which ought to govern Indigenous research, only a limited number of studies exist that are dedicated to the analysis of Indigenous research protocols (Bowrey 2006; Carter 2010; Gray 2004; McCausland 2006; Thornely 2013). The use of comparative analysis of protocols with research outside of this field appears to be limited. The body of literature concerned with Indigenous research practices and the protection of Indigenous knowledge explores protocols in the context of arts-based practices (Clemens 2007:64); legal rights and intellectual property rights (Anderson 2010; Bowrey 2006; McCausland 2006); Indigenous place-based engagement (Carter 2010); and libraries, archives and databases (Garwood-Houng 2005; Nakata et al. 2005a, 2005b). The following paragraphs provide a cursory overview of the themes arising from this literature and outlines where they intersect with the arguments made in this thesis. The paragraphs include an overview of the prescriptive nature of protocols, legality of protocols, voluntary nature of protocols – based on choice, and enforceability issues, and the tension between universalising standards and place-based aspects.

The most common comment about protocols in Indigenous research is that they are prescriptive (Anderson 2010; Bowrey 2006; Carter 2010; Gray 2004), which infers that protocols are formalised and standardised, and there are obligations on what an actor should or ought to do. ‘Protocols as prescriptive devices’ position protocols as normative apparatuses and place them in the realm of normative ethics. In the context of art-based practices, Clemens argues that ‘the difficulty with such protocols is that they’re supported by intense moral anxieties, without any real legal standing’ (Clemens 2007:64). Certainly there is, for some, intense moral anxiety, but the research on the IIPP suggested that this does not occur for everyone. Some people very easily navigate protocols with limited moral anxiety, or rely on bureaucratic processes to allay it. I pick up on these themes in Chapters Five and Six where I explore the use of agreement, and research ethics review as part of the rational ordering of the DKCRC IIPP.

Yet, despite the analysis of protocols, very few attempts have been made to explore how protocols are enacted in practice, or to explore an ethical and moral basis from which to
assess and evaluate protocols. I do not seek to provide an ethical basis from which to evaluate protocol enactment, as that kind of endeavour is beyond the scope of this thesis. I do however, explore how organisations and individuals enact protocols in Chapters Five, Six and Seven, and provide a cursory outline of normative ethics in the context of this discussion in Chapter Seven.

Protocols may be legally binding in two distinct ways. Protocols could be constituted as ‘private law’ (Anderson 2010; Bowrey 2006), and while protocols on their own may not be legally binding however, ‘because protocols are articulated and negotiated with specific regard to practical detail within community contexts, they are a source and form of private law. This means that they can have legal standing’ (Anderson 2010:29). Additionally, some organisations use legal tools to embed protocols. While they may not be considered ‘hard law’, protocols are gaining legal status through incorporation into agreements, contracts and permits; and in some industries – such as the film industry, it is a mandatory requirement of funding (McCausland 2006). Agreements were used to embed the IIPP within the DKCRC network of partners and researchers and in the IIPP’s relationship to the State.

Protocols that use legal tools, such as contract and agreements, require a rational-legal bureaucracy and, as discussed in further detail in Chapters Four and Five, this further rationalises protocols and the research practices of actors. Additionally, this type of protocol enactment could be considered as gatekeeping because the protocol becomes a ‘filtering mechanism’ and part of a ‘chain of regulatory acts’ (Kavelin 2008). In the case of the Central Land Council (CLC) Protocols, all actors require a Special Purpose Permit in order to enter CLC land and undertake research activities, and in the case of the Australia Arts Council part of the funding requirement is to adhere to the protocol. Gatekeeping is discussed in further detail in Chapter Seven.

Protocols are often considered to be voluntary (Bowrey 2006; Clemens 2007; Garwood-Houng 2005; Mackay 2009) and point can be made explicitly and implicitly. When explicitly stated, a clear link is made between the voluntary nature of protocols and the choice of individuals or organisations to follow them (Bowrey 2006), and the way that protocols provide a gentle nudge to organisations not acting ethically (Mackay 2009). Garwood-Houng implicitly assumes that protocols are voluntary while arguing that
actors may be ignorant of the existence of the protocol or choose not to follow them (Garwood-Houng 2005). The implicit assumption that protocols are voluntary emerged in the study of the DKCRC IIPP and in Chapter Six I explore in more detail voluntariness of protocols as a style of enactment in further detail in Chapter Six, through the discussion on procedural ethics and ethics-in-practice. I examine this notion again in Chapter Seven where I argue that this voluntary style of enactment ought to be considered as gatecrashing.

Within protocols, there is also a tension between universal and local-based aspects of protocols. As Carter argues:

> [F]ormalising and codifying engagement relations and processes within static and prescriptive ‘protocols’ will counter any potential benefits it seeks, unless protocols are discursively, epistemologically and ontologically examined […] because they ignore the local nuances and ongoing processes that continue to make places (Carter 2010:201).

Carter, borrowing from Marika et al (Marika et al. 2009), argues for a positioning of Indigenous people ‘in-place’ rather than as a position that is considered ‘remote’. This positioning locates Indigenous people in relation to a powerful ‘home’ from where protocols can be understood, and for Carter and others, where they ought to be understood. Thornley made a similar point in the context of film-making, where she argued, ‘it seems there is a gulf between a documentary filmmaking practice required to engage with the Tasmanian Aboriginal community and their protocols […] and a fictional film illusionism perpetuating a colonizing imaginary of extinction’ (Thornely 2013:129). Positioning Indigenous peoples’ knowledge as ‘remote’ while they are at ‘home’ is, as I argue in Chapter Eight, an entanglement of protocols. In Chapter Eight I suggest, in a similar vein to Carter, that the narration and branding of Indigenous people as remote undermines their relationships to these places as ‘home’, and in doing so, destabilises the IIPP which seeks to recognise a site-specific knowledge.

As I reflected on the protocols in Indigenous research, and the research of them, I personally found the language to be flat and bland. Nothing about the language of protocols made me desire to do the right thing — to take the normative position. In the early stages of my research career nothing about the ideas embedded in organisational
protocols resonated with me, at least not in a way that allowed me to recall the principles and spirit of them to ‘do the right thing’. We need language and concepts that can be intellectually portable in ways that allow us to recall the protocol and embed it in our research practices. It is part of my desire to change the conceptual language of Indigenous research protocols that lead me to consider and analyse the notions of gatekeeper, guardian, and gatecrasher that are explored in further detail in Chapter Seven. The next two sections in this chapter provide an overview of a few studies that refer to protocols as recipes, intellectual vehicles, road rules and harmonious solutions respectively. I have chosen them for their use of metaphorical language as much as for the insights into how they operate in particular organisational settings – laboratories, medical practices, courts, and computer networks. Placing Indigenous research protocols in this broader discussion brings Indigenous research into contact with ideas that can assist with critically analysing how organisations and individuals order protocols, and how protocols order research practices.

**Laboratories, medical practices and courts: protocol-as-recipe, protocol-as-chain of custody**

Protocols are performed widely across a variety of organisations. This section provides an overview of three papers that consider protocols in laboratories, medical practices and criminal proceedings as protocol-as-recipe and protocol-as-chain of command (Berg 1998; Lynch 2002; Staller 2010). Rather than a representative sample of the literature on protocols in the differing organisational settings I have chosen papers that provide metaphorical language that can add texture and depth to the literature from Indigenous fields. Through this section I note the way that protocols standardise and coordinate practices over time and space, local practices (re)produce protocols, the tension between the instruction and performance of protocols, and arbitrariness of the boundary between protocols and practices.

Protocols are like recipes (Berg 1998; Lynch 2002; Staller 2010). As Lynch argues:

*According to the analogy, a laboratory protocol is like a recipe. It lists the ingredients, species measured amounts of each ingredient, and gives step-by-step instructions for combining them […] Like a recipe, a protocol is a set of instructions that precedes its enactment. […] Like a recipe, a protocol often takes the form of a sketchy instruction which leaves considerable discretion about how it is to be ‘followed’ on any particular occasion* (Lynch 2002:205).
The idea of considering protocols as recipes derives from Goody (1977), who argued that the analogy has implications beyond meals because it lists what is required and the actions that should be carried out to prepare the meal. Behind the recipe lies a shopping list of all the things required to implement the recipe, and the need to acquire these things to make the meal constructs future time and space (Goody 1977). Before making a recipe it is necessary to check that all the ingredients are in the correct measure. If the correct ingredients are not there, then they needs to be acquired either by gathering them from the garden or making a trip to the shop to buy them.

There are many reasons why an organisation prepares a protocol, but the obvious reason is that ‘writing enables a procedure to be preserved, recalled, disseminated, and improved upon’ (Lynch 2002:207). The making of lists was part of the rationalisation of knowledge, which made possible the replication of procedures through which medicine flourished (Goody 1977). In the context of research, particularly in a laboratory that is like a kitchen (Lynch 2002), the recipe is a useful metaphor to describe the components and step-by-step instructions of protocols and how to enact them in practice. In medical practices, protocols act as a ‘focal point’ to orientate staff on what they should do next (Berg 1998). In policing practices, this includes the sequencing of events for gathering evidence, known as a chain of command (Staller 2010). The standardisation of instructions is the expression of rational order.

However, protocols do not just include lists of ingredients and instructions that create order through sequencing and directing; in practice they include a wide heterogeneous collection of elements (Berg 1998). As well as directing actions, protocols order through assembling elements. In preparing a recipe, the elements include the pots and pans, a stove, knowledge about how to use the stove, and prior knowledge of terminology in the instructions. Protocols act as ‘intellectual vehicles’ to change the ‘messiness’ of practices which order through an agreed approach that allows coordination of activities and elements over different sites and times (Berg 1998). For example, in medical research this includes expensive medical technology, workload and financial commitments of the centres, and patients; and in policing of child abuse, for example, it includes the victim, the perpetrator, police, lawyers, the court-room, video evidence, and DNA testing (Staller 2010). The coordination of elements, while an expression of rational ordering – through the positioning of elements in a pre-determined chain of
Chapter Two

events, is also an expression of relational order. In policing and court practices, where child abuse is concerned, coordination includes, for example, the communication between child protection service workers and police to schedule an appointment to film the child victim’s statement, and communication between the police and prosecutors to secure a case. I explore the coordination of elements through Chapters Four, Five, Six where I map the entities that constitute the IIPP — IPRs, agreements, commitment of centres to the agreements and the protocol, and ‘procedural ethics’— and how the assembling of these elements constitute rational and relational order.

The written text of a protocol requires the various parts creating the practice be performed in a standard, steady, and predictable way (Berg 1998). Yet, the distinction between protocol and practice is arbitrary. ‘There is no discrete ‘boundary’ between protocols and practices’; instead, protocols are amended, appended, and supplemented with other instructions that clarify previous knowledge and competencies (Lynch 2002:211). The constitution of a protocol is a process of ongoing negotiation where practices are transformed, and where it acquires its shape (Berg 1998). Practicing scientists who use protocols know this, and they know that they cannot clarify procedures for all instances (Lynch 2002). As Lynch argues, ‘protocols far from reducing orders of lived activity to formulae, are themselves placed as the disposal of such orders’ (Lynch 2002:204).

As Lynch suggests, protocol-as-recipe is a useful metaphor because as every good cook knows, you can make changes to the ingredients and the instructions without compromising the final product. However, for some recipes if you move too far away from the crucial ingredients and instructions you risk spoiling the dish. In a laboratory setting this could spell disaster — such as an explosion due to mixing the wrong chemicals; or change the results’ significance. Some practitioners or teams may consider a particular protocol as adequate, while others in differing circumstances may find the protocol insufficient (Lynch 2002). In laboratories, where practitioners modify protocols, there is a clear relationship between local practices and written protocols that ‘intertwine and supplement each other’ (Lynch 2002:210). Likewise, as discussed previously, Staller shows in the development of a child abuse protocol, videotaping children’s evidence started as a local practice but became one of the crucial elements of the protocol (Staller 2010).
The level of experience and expertise of actors is another crucial point that needs to be considered when evaluating protocols. For example, in a laboratory handling chemicals, in the hands of an amateur or an early-career researcher one would desire the actor to follow the protocol word-for-word and step-by-step, but in the hands of an experienced chemist, who has significant knowledge and experience of chemistry, the protocol acts less as a must-do list and more of a guide. Protocols presuppose that actors have ‘technical’ ‘competencies’ – requiring and experience, and understanding ordinary language and applying it (Lynch 2002). There is ‘considerable interplay between understanding ‘ordinary’ terms like ‘gently’ and ‘approximately’ and developing local competencies that establish just what those terms mean for the technical task at hand’ (Lynch 2002:206). Despite this, as Lynch argues:

> protocols sometimes acquire a normative status for evaluating practices and enforcing standards. When protocols are administrated as normative standards, the difference between specific protocol formulations and actual practices can be made thematic in a way that implicates the adequacy of the practices in question (Lynch 2002:211).

Lynch’s observations are particularly important in Indigenous research where protocols were generally introduced to ensure standards of research that allow for the flexible unfolding of ethical research relationships. When positioned as an absolute rule, there is a risk that the standards being enforced in the protocol are unable to evolve as the research relationship matures.

In this section, I provided an overview of the protocol-as-recipe metaphor and its application in laboratories, medical practices and the protocol-as-chain of command in policing and the courts. I alluded to the way that protocols assist with directing and coordinating elements for particular practices, and which constitutes the expression or rational and relational ordering. I discussed how the distinction between protocol and practice is arbitrary and explored how local practices (re)produce protocols. The differing enactment and (re)production of protocols is in part due to the level of expertise, experience and knowledge of the actor enacting them.
Computer networks: protocol-as-road rules and protocol-as-telephone conversation

In *Protocol. Control after Decentralization*, Galloway uses a number of metaphors to explore, analyse and explain protocols (Galloway 2004). This section discusses Galloway’s treatment of protocols as protocol-as-road rules and protocol-as-telephone conversations. In the first instance, Galloway suggests that it is useful to consider the highway system and its use of road rules as an analogy to understand protocols in computer networks:

> Many different combinations of roads are available to a person driving from point A to point B. However, en route one is compelled to stop at red lights, stay between the white lines, follow a reasonably direct path, and so on. These conventional rules that govern the set of possible behavior patterns within a heterogeneous system are what computer scientists call protocol. Thus, protocol is a technique for achieving voluntary regulation within a contingent environment (Galloway 2004:7).

Through the protocol-as-road rules metaphor Galloway argues that in a computer network (the highway) protocols (the road rules) direct the set of possible behaviour patterns within the system. When a person gets in a vehicle and travels, for example from Newtown to Glebe in Sydney or Harlem to the Gas Works in New York, they can take a number of routes, and en route they are compelled to stop at traffic lights, drive at the correct speed limit, and drive down the streets in the correct direction.

At the end of his book, Galloway returns to the protocol-as-road rules metaphor to draw a distinction between rules that seek changes through a request backed with the threat of a fine, and those that materially compel people to change their behaviour. As he illustrates:

> On an empty town street where drivers are prone to speed, the local residents elect to have speed bumps installed. The inhabitants assume that the speed bumps will reduce the amount of speeding through their community.

> In another part of town is an identical street also plagued by speeding. But here the neighborhood decides against speed bumps. Residents pass laws to reduce the legal speed limit. They install speed limit signs and increase police radar surveillance. Both solutions succeed in
In this example, Galloway argues that the speed bump, and not changes to the speed limit, is the protocological solution. Installing a speed bump creates a ‘physical system of organization’ that materially forces the driver to comply (Galloway 2004:241). Changing the speed limits only suggests that drivers should change their behaviour. Even with the existence of laws, and the associated threats of fines, the driver may or may not choose to follow the road rules. In a similar vein, Callon and Latour use the idea of a speed bump, ‘aptly called a sleeping policeman’, to argue that is different to a standing policeman and a sign to Slow Down (Callon and Latour 1992). In their example of a campus manager attempting to slow down cars on campus, they argued that the speed bumps changed the behaviour of drivers from a ‘culturally learned action’ of slowing down for the sake of other humans, to one of protecting the suspension of their cars for their own benefit (Callon and Latour 1992).

Yet, as Galloway discusses, even where protocols exist to force actors to comply there are still some actors who seek to circumvent protocols. In computer networks these actors are sometimes described and defined as ‘hackers’. I discuss this characterisation of protocol enactment later in this chapter. The distinction between types of control is similar to the debate occurring through Indigenous practices relating to the voluntary characteristics of protocols, and the use of contracts and agreements to force an actor to comply.

For Galloway, protocol operates as part of an apparatus. This apparatus includes the distributed network (the diagram), the digital computer (the technology) and protocol (the management style). All of these organise and circumscribe a ‘new apparatus of control’ that has succeeded at the start of the new millennium (Galloway 2004:3). Rather than a centralised form of command and control, the new apparatus of control is decentralised, and ‘protocol is how technological control exists after decentralization’ (Galloway 2004:8). The misconception that the Internet is chaotic rather than controlled, as Galloway argues, exists because ‘protocol is based on a contradiction between two opposing machines: One machine radically distributes control into autonomous locales, the other machine focuses control into rigidly defined hierarchies’.
(Galloway 2004:8). This tension creates the right conditions for ‘protological control’ (Galloway 2004:8). Galloway’s analysis of protocols draws a number of conclusions including that protocol: is a ‘system of distributed management’, ‘facilitates peer-to-peer relationships between autonomous entities’; is ‘anti-hierarchy and anti-authority’; ‘engenders localized decision making, not centralized’; ‘robust, flexible and universal’; ‘can accommodate massive contingency’; is the ‘outcome (not the antecedent) of distributed behavior’ (Galloway 2004:40).

Galloway’s protocol-as-road rules metaphor relies on the idea of a highway system, and smaller roads to provide a visual image of the diagram as the computer network without centralised hubs. It is a system where ‘[p]rotocols are the common languages that all computers on the network speak. These component protocols act like layers. Each layer has a different function […]. Considered as a whole, the layers allow communication to happen’ (Galloway 2004:39). Galloway, using a telephone conversation to explore in more detail how protocols operate, and asks the reader to:

> consider an average telephone conversation as an analogy. There are several protocols at play during a telephone call. Some are technical, some social. For example, the act of listening for a dial tone and dialing the desired phone number can be considered to be in a different “layer” than the conversation itself (Galloway 2004:40).

The protocol-as-telephone conversation analogy provides the basis for arguing that in a given situation there are a number of protocols each with different functions. In the case of a telephone conversation, he argues that protocols form technical (checking to see the person is still on the end of the phone, and the phone lines connecting) and social layers (the conversation). Using the TCP/IP Internet protocols, Galloway argues that protocols govern and give shape to the following four layers: application, transport, Internet and link (Galloway 2004:41). The application layer, which is the conversation in the telephone conversation, preserves the content of data. The transport layer, a step up in the hierarchy, makes sure that data arrives at its destination. The Internet layer is concerned with ‘the movement of data from one place to another’ (Galloway 2004:41). The link layer, which was less important to Galloway’s study, is the hardware specific layer that encapsulates the data.
Galloway’s analysis challenges us to consider protocols in a number of different ways. The discussion of layers challenges us to consider the strata of protocols, and the multiple ways they order relationships, situations and events. Through Chapters Five and Six, I utilise Galloway’s conceptualisation of protocols to consider what might be broadly considered as the legal and ethical layers of the IIPP. The idea of the ‘distributed networks’ challenges us to consider the contexts in which protocols operate. In Chapter Four I explore the IIPP through the context of the CRC and note the way that rational and relational order both exist through the CRC as part of the IIPP. Galloway’s argument that protocols are based on a contradiction challenges us to consider how control is distributed through autonomous locales and hierarchies. Throughout this thesis, I refer to this as a contradiction between rational and relational order. I explore this contradiction through Chapters Four, Five, Six and Seven. His analysis of protocols and ‘protological control’ encourages a consideration of the operations of control through protocols, which I consider through Chapters Five, Six and Seven. The idea that actors enact protocols in differing ways, through the notion of the ‘hacker,’ challenges us to specifically theorise protocol enactment. I consider how actors enact protocols in Chapter Seven where, through the notions of gatekeeper, guardian, and gatecrasher, I argue that actors enact protocols rationally and relationally.

Protocols, as I have illustrated, are used in a variety of fields and are referred to in a variety of ways. The metaphorical language previously discussed provides a series of concepts that are particularly useful for exploring how protocols order research practices and Indigenous knowledge in research networks. The protocol-as-etiquette and protocol-as-guide metaphors challenge us to explore the ethical aspects of protocol. The protocol-as-recipe provides a basis for mapping the elements and instructions of protocols. The protocol-as-road rules and protocol-as-telephone conversation metaphors provide the basis for analysing the context that protocols are a part of (and order), the contradictory nature of protocols, the ways that control operates through protocols and how protocols form layers, and how actors enact protocols. The next section provides an overview of the ways that organisations have been conceptualised as both rationally and relationally ordered entities in the organisational studies.
Bureaucracy and post-bureaucracy: rational and relational order

The IIPP was established by, and as part of, an organisation. Understanding how the IIPP was ordered and assembled through its organisational context is critical to understanding and exploring the IIPP assemblage. An analysis of theories of organisations provides the backdrop to explore the organisational context of the IIPP. There are many different metaphors to describe organisations — including for example machine, organism, game, zoo, journey (Kendall and Kendall 1993). I focus here on two metaphors — the ‘machine’ and the ‘organism,’ because as others argue, they are the two dominant metaphors of organisation (Mannheim 1969; Morgan 1990).

Deriving in part from Frederick Taylor’s principles of scientific management (1911), the ‘machine’ metaphor suggests that organisations are rationally ordered mechanical entities that are made up of parts that form the structure (Cornelissen 2005; Kendall and Kendall 1993; Morgan 1990). Used to conceptualise organisations as rationally ordered apparatuses, the ‘machine’ metaphor draws attention to predictability, where standardised practices and processes are created for a particular purpose and goal, where performance can be calculated, and where actors are interchangeable cogs (Kendall and Kendall 1993; Morgan 1990). Mannheim also suggests that the ‘machine’ metaphor did not stand by itself, but was supplemented through a theory of social contract (Mannheim 1969). This is most transparent through the agency theory of the ‘firm’ which is a rational economic theory of organisations based on a theory of social contract (Jensen and Meckling 1976).

The ‘organism’ metaphor, on the other hand, is used to refer to a system of connected and dependent parts constituted as a whole (Morgan 1990; Rottleuthner 1987). The ‘organism’ metaphor makes an analogy between society and the human body, and suggests that ‘just as bodily organs work together for the organism as a whole, so the function of social institutions is to work in harmony for the benefit of society’ (DeLanda 2006:12). The organism metaphor has been used by theorists such as August Comte, Emile Durkheim and Emmanuel Kant (Keller 2005; Levine 1995; Rottleuthner 1987). Rottleuthner, for example, suggests that Kant’s term ‘organized beings’ was used to conceptualise formal categories of part and whole (Rottleuthner 1987). As Rottleuthner states:
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[...]
generally extended beyond the spectrum of plant, animal and human being, to refer to spiritual and moral organisms in which the parts are alternatively cause and effect, operate through their relation to the whole, and the whole is an end in itself. It is not the reference to the biological sphere, but the formal categories of part and whole, and cause and effect, means and end that allows use of the concept of organism (Rottleuthner 1987:100).

As Morgan argues, ‘[w]hereas in the machine metaphor the concept of organization is as a closed and somewhat static structure, in the organismic metaphor the concept of organization is as a living entity in constant flux and change, interacting with its environment in an attempt to satisfy its needs’ (Morgan 1990:614). An ‘organism’ is a system of organs that behaves like it has a mind of its own, and one that self-organises (Keller 2005; Rottleuthner 1987).

The following part of this chapter provides an overview of theories or organisations. It starts with an overview of the bureaucratic ‘machine’, which is considered as a rationally ordered organisation that is based on utilitarianism and guided by self-interested actors. This is followed by an overview of the post-bureaucratic ‘organism’, which is considered as a relationally ordered organisation guided by altruistic actors.

Bureaucracy: rational order and self-interest of the ‘machine’

To provide an overview of the position that organisations are rationally bound machines, in this section I draw upon Weber’s theory of bureaucracy (Weber 1968), and the transaction cost theory and agency theory of the ‘firm’— as theorised by Coase (1937), Alchian and Demestz (1972), and Jensen and Meckling (1976). Through this section, I sketch some of the links between rational theories of organisations and consequentialist (utilitarian), contractarian (social contract) and rights-based ethics.

Weber, perhaps one of the most prominent theorists on the rationalisation of society, outlined a theory of bureaucracy to explain social action and the rationalisation of society (Weber 1968). Foregrounding his theory of bureaucracy in *Science as Vocation*, Weber argued that in modern society there are ‘no mysterious incalculable forces that come into play, but rather that one can, in principle, master all things by calculation’ (Weber 1958:117). This process of rationalisation and intellectualisation, he argued, was leading to the ‘disenchantment of the world’ (Weber 1958:133)⁴.
In his book *Economy and Society*, Weber set out to write a theory that explained social action and the rationalisation of society (Weber 1968). Weber argued that four types of social action existed — from where motivation is derived — and include: rational (means-end); orientation to absolute values (ethical, aesthetic, religious); affectual orientation (feelings and emotions of the actor) and, traditionally orientated (habituation of long practice) (Weber 1968). From these social actions, Weber argued that four types of rationality emerge including: practical-rationality (day-to-day activities), theoretical-rationality (abstract reasoning), value-rationality (set of values and beliefs), and formal-rationality (also referred to as purposive-rationality and instrumental-rationality) (means-end instituted through rules, regulations and laws) (Carroll 2011; Ritzer 2011; Weber 1968). Weber argued that values and beliefs (value rationality) could not hold their ground against formalised instrumental sets of rules, regulations and laws (formal rationality), which were expanding their reach through the State and the market (Murphy 2009).

Through the analytic concept of ‘bureaucracy’ Weber sought to explain how rationalisation occurred in the setting of an agency (or ‘bureau’) (Olsen 2005). Weber’s conceptualisation of bureaucracy was based on the metaphor of the machine. As he argued:

> The fully developed bureaucratic apparatus compares with other organizations exactly as does the machine with non-mechanical modes of production. Precision, speed, knowledge of the files, continuity, discretion, unity, strict subordination, reduction of friction and material and personal costs—these are raised to the optimum point in the strictly bureaucratic administration, and especially in its monocratic form (Weber 1968:973).

The machine metaphor gave Weber a conceptual tool to explain the processes of rationalisation, and how things in organisations worked together for precision, speed and efficiency towards a particular end. Through the ‘machine’ metaphor Weber argued that bureaucracy is based on an ‘office hierarchy,’ with ‘channels of appeal,’ that specifies a system of supervision of higher offices over lower offices (Weber 1968:957). One person rules an ‘office’ in an office hierarchy; and the management of the office is based upon written documents (files). The files and collection of ‘bodies of officials working in an agency’ make up the bureau.
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In bureaucracies, argued Weber, regular activities required for the ‘bureau’ are assigned as duties, and officials have the authority to give commands in the discharge of duties (Weber 1968:956). These commands are based on general rules that are stable, exhaustive and can be learned. Officials possess knowledge of the rules as a form of special technical expertise that involves jurisprudence and administrative or business management. In a bureaucracy, office management presupposes training or education in a specialised field, where only people ‘who qualify under general rules are employed’ (Weber 1968:956). This means that people who are employed on the basis of an assigned role must have the necessary skills, expertise and specialisation for that designated position. Weber’s bureaucracy was based on the view that officials treat their position from a utilitarian position, and that

*The individual bureaucrat cannot squirm out of the apparatus into which he has been harnessed [...]*, the professional bureaucrat is chained to his activity in this entire economic and ideological existence. In the great majority of cases he is only a small cog in a ceaselessly moving mechanism which prescribes to him an essentially fixed route of march (Weber 1968: 987-988):

The concept of bureaucracy ‘implies a larger organizational and normative structure [...] founded on authority, that is, the belief in a legitimate, rational-legal political order and the right of the state to define and enforce the legal order’ (Olsen 2005:2-3). Bureaucracy is thus the ‘iron cage’ that compels actors to follow ‘formal-rationality’ (Casey 2004; DiMaggio and Powell 1983; Roth 1968). Following formal-rationality is part of the process of rationalisation that involves the ‘substitution for the unthinking acceptance of ancient customs of deliberative adaptation for situations in terms of self-interest’ (Weber 1968:32). As, Edles and Appelrouth explain, formal-rational action is ‘geared toward the efficient pursuit of goals through calculating the advantages and disadvantages associated with the possible means for realizing them’ (Edles and Appelrouth 2015:156). The pursuit of goals based on the best possible outcomes is a principle of utilitarianism. That is, Weber’s theory of rationalisation, captured through the concept of bureaucracy, is based on utilitarian ethics.

Utilitarianism, a branch of consequential ethics, is based on the ‘Great Happiness Principles’ (Mill 2013:417), or the principal of utility — where the rightness of actions
are judged by their consequences or outcomes (Shafer-Landau 2013; Smart 2013). Utilitarianism posits that the means justifies the end if the end produces the best outcome for the greatest number of people (Shafer-Landau 2013). Actors making this judgement will base it on the greatest possible outcome, which includes their own self-interest. Yet as Weber argued:

\[\text{The fact that some persons act in a certain way because they regard it as prescribed by legal propositions [...] is, of course, an essential element in the actual emergence and continued operation of a "legal order." But [...] it is by no means necessary that all, or even a majority, of those who engage in such conduct, do so from this motivation. As a matter of fact, such a situation has never occurred. The broad mass of the participants act in a way corresponding to legal norms, not out of obedience regarded as a legal obligation, but either because the environment approves of the conduct and disapproves of its opposite, or merely as a result of unreflective habituation to a regularity of life that has engraved itself as a custom} (Weber 1968:312).\]

Knowledge is held in a particular place in Weber’s bureaucracy. As he argued ‘since the specialised knowledge of the expert became more and more the foundation for the power of the officeholder, an early concern of the ruler was how to exploit the special knowledge of experts without having to abdicate in their favor’ (Weber 1968:994). In pre-bureaucratic organisations this was ordered, argued Weber, through ‘collegiate bodies.’ In a move to bureaucracy the collegiate bodies were replaced with interest groups in the form of ‘advisory bodies’ (Weber 1968). ‘Advisory bodies’ are made of individuals ‘recruited from among the economically and socially most influential strata’ (Weber 1968:997). The DKCRC used, as I discuss later in Chapter Four, ‘advisory bodies’ in the form of the DKCRC Participants’ Forum and the Desert Advisory Forum. These bodies performed the role of advising the DKCRC Board on the operations of its bureaucracy.

Several theorists critique Weber’s theory on a number of grounds. The theory, as Jenkins argues, assumes that actors routinely follow formal rationality, and underestimates the capacity of actors to resist or subvert the rules and authority (Jenkins 2000). Formal rationality was prioritised to the exclusion of others, and systems and actions were confused (Habermas 1984; Murphy 2009; Steuerman 1989). Moreover, the
rational-legal type, as Waeraas argues, is no longer the legitimate or dominant form of authority in organisations – it is now possible to discern an ‘emotional order’ which has partially replaced the ‘rational order’ (Waeraas 2007).

When studying the enactment of protocols in the Desert Knowledge Cooperative Research Centre it became clear that rational order existed through standardised approaches to ethics and agreement making. Yet, what emerged is that some actors routinely follow rules, while others do not. When actors chose not to enact the protocol routinely, they appeared to have recourse to an alternative set of rules or values. This showed that rational order was not dominant, but that relational order maintains a dynamic tension with it. This notion is explored in further detail in Chapters Five, Six and Seven. Additionally, as I discuss in Chapters Five and Six, ‘rationality’ can and does exist in a dynamic tension to relational order. Weber touched upon this while attempting to delineate the differences between communal (social action based on subjective feelings) and associative (rationally motivated social action) relationships. There he argues that ‘no matter how calculating and hard-headed the ruling considerations in such a social relationship – as that of a merchant to his customers – may be, it is quite possible for it to involve emotional values which transcend its utilitarian significance’ (Weber 1968:41). I turn now to provide an overview of transaction cost theory, agency theory, and the economic theory of property rights, which have variously theorised organisations (or the ‘firm’) as being constituted by rational order.

Transaction cost theory, agency theory and the economic theory of property rights—through the work of people such as Coase (1937), Alchian and Demestz (1972), Jensen and Meckling (1976), and more recently Williamson (1981), and Hart, Moore and Grossman (Grossman and Hart 1986; Hart and Moore 1988, 1999) – explored the interests of actors within the ‘firm’ in ways that echoed Weber’s notion of bureaucracy. Coase, in The Nature of the Firm, argued that the distinctive feature of the firm is the suppression of the ‘price mechanism’ (Coase 1937). Neoclassical economics depicts the ‘market as an economic system where the price mechanism, Adam Smith’s ‘invisible hand’, efficiently and costlessly coordinates economic activities’ (Chauhand 2009:7). The price mechanism, one of the main building blocks of the neoclassical economic system,
is as ‘a system of exchange in which price of a product is determined through interaction of market forces of demand and supply’ (Eisenhardt 1989:225).

Coase argued that rather than coordination resulting from market mechanisms, coordination in firms is based on a hierarchy overseen by the ‘entrepreneur coordinator’ (Charreaux 2002; Coase 1937:20). This is similar to Weber’s argument that bureaucracies are based on an office hierarchy with assigned duties. Coordination, argued Coase, occurs through a hierarchy when it becomes more cost effective for actors to mediate transaction costs rather than leave it to the market (Coase 1937; Ouchi 1980). Coase’s approach is more broadly referred to as the ‘transaction cost theory’ of the firm (Brosseau and Glachant 2002). The transaction cost theory approach takes the ‘transaction’ as the unit of analysis, and posits that understanding how actors seek to minimise transaction costs is central to understanding organisations (Williamson 1981:548). Williamson aptly described ‘transaction cost’ through a comparison with a machine and an organisation:

In mechanical systems we look for frictions: do the gears mesh, are the parts lubricated, is there needless slippage or other loss of energy? The economic counterpart of friction is transaction cost: do the parties to the exchange operate harmoniously, or are there frequent misunderstandings and conflicts that lead to delays, breakdowns, and other malfunctions? (Williamson 1981:552).

Transaction cost theory approaches, thus, focus on understanding transactions in organisations where costs are likely to result from an action of one or more of the parties. Coase’s transaction cost theory rests on the assumptions that actors are subject to ‘bounded rationality’ (Brosseau and Glachant 2002; Reed 1996; Williamson 1981), and that actors are self-interested because they are motivated by the goal of minimum costs (Reed 1996; Williamson 1981). The implication of bounded rationality on the performance of contracts is discussed later in this chapter.

Coase was also concerned with the influence of the allocation of rights (property rights) on coordination and negotiations. In The Problem of Social Costs (1960) Coase argued that in the absence of transaction costs the rearrangement of property rights will take place if it leads to an increase in the value of production. Coase also argued that when
transaction costs exist, and invariably they do, that the rearrangement of property rights would only occur if the increase in the value of production (after rearranging the property rights) were greater than the costs that it would take to bring about rearranging the property rights (Coase 1960). These propositions have subsequently been labelled the ‘Coase Theorem’ (Schlag 2013).

Coase’s Theorem was a critique of Pigouvian economics that knowledge, when conceived of as a ‘public good’, has the defining characteristics of non-rivalrous and non-excludable (Kaul, Grunberg, and Stern 1999; McTaggart, Findlay, and Parkin 1996). This means that one person’s enjoyment or use of knowledge does not exclude another person from also enjoying or using the same knowledge (non-rivalrous); and it is difficult, or impossible, to exclude one person from accessing or gaining utility from the same knowledge, at the same time as yourself (non-excludable) (Stiglitz 1999).

Neoclassical economics considers that when actors access or gain utility from knowledge a ‘free-rider’ effect is in place, which is considered an externality and a cause of market failure (Mankiw 2012). IPRs are an economic solution to regulate the ‘free rider effect’ and to curb market failure (Baumol 1992; Benko 1987; McTaggart, Findlay, and Parkin 1996).

One of the assumptions in the Coase Theorem is that parties will only act in self-interest — that is they will act to minimise costs and increase the value of their own production. The Coase Theorem has been both widely supported and criticised (See for example: Block 1977; Usher 1998). The case study of the IIPP indicates, in part, that actors do not always act in self-interest and are not necessarily driven by transaction costs in the reallocation of property rights. I discuss this in further detail in Chapter Six where I explore how one actor, in the absence of a price on ‘Indigenous intellectual property,’ renegotiated the arrangements of property rights (or more precisely the benefits arising from property rights, as outlined in Clause Seven of the IIPP).

Alchian and Demestz, however disagreed with Coase and instead proposed that coordination was achieved through contracts (Alchian and Demestz 1972; Jensen and Meckling 1976). Alchian and Demestz however, agreed with the reading of the Coase Theorem that ‘under certain types of relational arrangements, only a reallocation of property rights can overcome an economic agents’ propensity to be opportunistic’
(Brosseau and Glachant 2002:7). Jensen and Meckling, following on from Alchian and Demestz, argued that organisations are governed by agency relationships where both parties seek to maximise their own utility (Jensen and Meckling 1976). Jensen and Meckling’s approach is referred to as agency theory or positive agency theory (Brosseau and Glachant 2002; Cao and Lumineau 2015; Charreaux 2002). The agency theory proposition that parties will seek to maximise their own utility is a fundamental basis of utilitarianism and market-based economics — and is a similar Weber’s proposition. However, rather than pure self-interest to maximise their own utility, Jensen and Meckling argued that an agency relationship in an organisation is:

> a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent (Jensen and Meckling 1976:5).

An agency relationship is then considered as a contract relationship where an owner or a shareholder (the principal) concedes authority to a manager (the agent), who acts in their name in a way that will maximise their wealth (Cuevas-Rodriguez, Gomez-Mejia, and Wiseman 2012; Jensen and Meckling 1976; Kupplerwieser 2011; Olssen and Peters 2005; Preston 1998). As Ouchi argues, through borrowing from agency theory:

> In bureaucratic relationships each party contributes labor to a corporate body which mediates the relationship by placing a value on each contribution and then compensating it fairly. The perception of equity in this case depends upon a social agreement that the bureaucratic hierarchy has the legitimate authority to provide this mediation (Ouchi 1980:130).

An agency relationship is based then on a contract that includes a set of standard rules that are negotiated rather than, as in the case of Weber’s bureaucracy, imposed by a hierarchy. However, as Jensen and Meckling argue, the ‘agent’ (the manager or buyer) will not always act in the interest of the ‘principal’ (the owner or supplier) (Jensen and Meckling 1976:5). Agency theory, like transaction cost theory, rests on the assumption of bounded rationality and self-interest (Eisenhardt 1989). Agency theory views agents through a utilitarian lens, where agents are seen as self-interested individuals who seek to maximise their own self-interests, thus acting against the interests of the ‘principal’ (Cuevas-Rodriguez, Gomez-Mejia, and Wiseman 2012; Eisenhardt 1985).
of trying to get an ‘agent’ to maximise the ‘principals’ welfare, as Jensen and Meckling remind us, ‘exists in all organizations and in all cooperative efforts – at every level of management’ across firms, universities, cooperatives, bureaus, unions, and mutual companies (Jensen and Meckling 1976:6).

Agency theory rests on the notion of the ‘contract’. To an economist ‘a contract is an agreement under which two parties make reciprocal commitments in terms of their behavior – a bilateral coordination arrangement’ (Brosseau and Glachant 2002:3 Italics appear in text). Beyond the economic conceptualisation of contract, agency theory itself rests on social contract theory (contractarianism) — the idea that ‘morality consists of rules to which everyone would consent under appropriate conditions’ (Hooker 2013:435). Contractarian theorists include, for example, Thomas Hobbes, Emmanuel Kant, and John Rawls (Shafer-Landau 2013). In a contractual relationship ‘the duties of the partners have been negotiated, defined and agreed before any action is undertaken’ (Bauman 1993:58 Italics appear in text). Because parties agreed to particular duties and arrangements, contracts rests on the idea of consent to contractual obligations (Bauman 1993). Consent to obligations, duties or particular arrangements through a contract implies ‘calculability of action’ or ‘action that is the outcome of rational decision-making’ (Bauman 1993:59-60). Thus, contractarianism theory is based on ‘rational egoism’ — ‘the view that one has good reason to do something only if doing it will serve one’s self-interest’ (Shafer-Landau 2013:556).

The contractarian approach to coordination was evident in the DKCRC. As I discuss in further detail in Chapters Four, Five and Six, contracts were used to form the network of DKCRC partners and researchers. The IIPP was embedded in the DKCRC contracts, and as I argue in Chapter Seven, shaped the subjectivities of actors based on self-interested individuals who enacted the IIPP in a gatekeeping style. While the DKCRC contract relationships were based on calculable decisions, on a more macro level, the suite of contracts employed by the DKCRC created part of the relational order of the DKCRC and the IIPP. Additionally, as I argue in Chapters Six and Seven, actors do not always act in self-interest. Some DKCRC actors, even within the context of an agency relationship, embodied altruistic behaviours. In Chapter Seven I draw upon the steward-principal critique of agency theory (which is discussed in further detail later in this chapter) to explore the idea that some actors in the IIPP enacted the protocol as
guardians, rather than as gatekeepers. The DKCRC contracts, as I argue, were both rational and relational tools. The contracts were rational because they standardised the relationships of DKCRC actors to the DKCRC. And through an inclusion of the IIPP the DKCRC contracts standardised the relationship of DKCRC actors to Indigenous people/s and Indigenous knowledge. The DKCRC contracts were also relational because they created the necessary arrangements to allow DKCRC actors to join the DKCRC as ‘partners’ and other entities.

As mentioned earlier, transaction cost theory and agency theory rest on the assumption that actors are subject to bounded rationality (Eisenhardt 1989). As Simon argues, rationality can be bounded due to ‘incomplete information about alternatives’ and complexity that is ‘so great as to prevent the actor from calculating the best course of action’ (Simon 1972:163-164). Therefore, because parties to contracts operate from the basis of bounded rationality, contracts are incomplete (Hart and Moore 1988, 1999; Williamson 1981). This means that ‘contracts cannot specify all states of nature or all actions in advance’ (Aghion, Bloom, and Van Reenen 2013:2). This means that discretion is left to the parties to the contract to interpret and negotiate the principles of the contract. The lack of specificity in contracts can cause ambiguity that creates the space for opportunistic behaviour, which decreases the ‘safeguarding function’ of the contract (Cao and Lumineau 2015). The case study of the IIPP indicates, as I discuss in Chapter Seven, that opportunistic behaviour arose in some instances but not all. The lack of specificity in clauses also creates opportunities for parties to negotiate (or renegotiate) the meaning, which can strengthen the relationship and thus increase the ‘safeguarding function’ of the contract. I turn now to a discussion of post-bureaucratic organisation and coordination that rely on relational order.

**Post-bureaucracy: emergence of relational order**

Since Weber’s theory of rationalisation and bureaucracy, a whole new set of power relationships has emerged around the world of knowledge including: the prominence of a hierarchy in the existing order of knowledge; relationships of reciprocal legitimation between knowledge and power; changing spatiality of knowledge production; and growing commercialisation in the political economy of knowledge production (Weiler 2001). These changes are perceived as a move away from the industrial and modern society toward the ‘rise of soft capitalism’ (Thrift 2005) and the emergence of a
social order that has been variously labelled, and theorised, as post-industrial, post-capitalist, information, knowledge and a network society (Bell 1973; Castells 2010, 2004; Drucker 1993; Mansell 1998; Neef 1998). Through these theoretical lenses organisations are described as a post-bureaucratic, network, virtual and relational organisation (Butera 2000; Conti 1993; Heckscher 2012; Hughes et al. 2001; Jarvenpaa and Tanriverdi 2003; Reed 2011; Reimer and Klein 2008; Ruigrok et al. 1999). This is a move away from emphasising hierarchies as the main form of social order and control, towards networks and distributed order and control.

This section provides an overview of ideas from the ‘rise of the network society’ (Castells 2010), and the ‘relational turn’ in social theory that questions the existence of bureaucratic forms of organisations (Bathelt and Gluckler 2011; Boggs and Rantisi 2003; Dépelteau 2013; Jones 2013; Sunley 2008). Related to the ‘relational turn’ is the idea that actors embody altruistic, rather than self-interested utilitarian values. The steward-principle notion, which critiques the agency theory view of relationships, is one such example of the changing assumptions of human behaviour in theory (Albanese, Dacin, and Harris 1997; Arthurs and Busenitz 2003; Davis, Schoorman, and Donaldson 1997; Hernandez 2008, 2012; Kuppelwieser 2011; McArthur 2012; Preston 1998; Schillemans 2013; Van Slyke 2006). I discuss the steward-principle notion later in this chapter in the context of a discussion on actors in organisations.

If the bureaucratic form of organisation draws on the ‘machine’ metaphor then perhaps the post-bureaucratic form draws more heavily on the ‘organism’ and ‘network.’ While the ‘organism’ metaphor of the organisation is not new, the metaphor lends itself more easily to relational rather than rational order, and hence to post-bureaucratic forms of organisations, because of its emphasis on the ‘whole’ and the ‘parts’, and on growth and change (Levine 1995).

Debates on post-bureaucratic organisations have their roots in the critique of Weber’s ideal-type rational bureaucracy (Reed 2011). The ‘post-bureaucratic’ organisation is based on consensus, which is created through institutional dialogue that is defined through influence rather than power, and which is not expressively reliant on an official position (Heckscher 2012). Influence depends on trust and the belief that people are working towards common organisation mission and benefits and not to maximise their
own self-gain (Heckscher 2012). To connect everyone to the mission a large amount of information on organisational strategy is shared that allows for the input of people at all levels of the organisation (Heckscher 2012). A focus on mission requires the use of ‘guidelines for action’, which ‘take the form of principles rather than rules’ (Heckscher 2012:103).

Castells, the champion of the ‘network society’ (Castells 2010), argues that at the heart of the information technological paradigm shift, and the ‘material foundation of the network society,’ are a number of key features (Castells 2010:n.p). These features include that the new technologies are designed to act on information, the pervasiveness of these technologies and the effect this has on human activity. And, as Castells’ argues, the network society is characterised by a ‘networking logic’, which can include a system or relationships using information technologies, which is based on flexibility so that organisations and processes can be altered and modified through reorganising their components (Castells 2010) Rather than competition, the logic of networks is cooperation (Castells 2010). Castells’ argument critiques utilitarian ideas of human behaviour, and is reminiscent of the musings of Adam Smith and Darwin on cooperation and altruism (Lumley 2013).

Information technology made the establishment and operation of the DKCRC possible, and gave researchers and managers, located at various sites around Australia the means to communicate with one another across vast distances. Castells’ analysis of the network society is useful for understanding broader changes, including university-industry research relationships. While Castells provides stories and vignettes throughout the Rise of the Network Society on practices in organisations, these are scattered throughout the book and are thus less helpful for theoretically understanding practices in organisations. Castells does make however, an important contribution to the placement and understanding of protocols that is of particular importance to this thesis.

As Castells argues, ‘the standards or (in my terminology) protocols of communication, determine the rules to be accepted once in the network. Once certain standards are incorporated in the program of networks, power is exercised not by exclusion from the networks but by the imposition of the rules of inclusion’ (Castells 2011:775). One of the promises of analysing protocols is that they offer a medium for exploring the rational
and relational, and how control and cooperation exist within and through organisations. Rather than privileging one over the other, the analysis can begin to explore the patterning and ordering of the rational and relational through the entities that form them. I return to this idea later in this section. Before doing so, the next few paragraphs provide an overview of the ‘relational turn’ in economic geography — one of the key areas in geography that analyses organisations.

The ‘relational turn’ in humanities and social sciences has coincided with shifts in the organisation of economic activity in late capitalism, which resulted in actors seeking newer forms of cooperation (Boggs and Rantisi 2003). Bathelt (2006), as Jones argues, posits that the shift is ‘rooted in epistemological dissatisfaction with ‘traditional approaches,’ which have neglected the role of actors (Jones 2013:606). Relational approaches thus focus on actions and interactions of actors in networks (Bathelt 2006; Boggs and Rantisi 2003; Sunley 2008). Relational perspectives aim to:

> expose different levels of attachment to [...] socio-cultural resources and structures' and in the process they 'shed light on different degrees of agency and choice exercised by individuals in their attempts to engage with or influence the world around them (Tatli et al. 2014:2).

Through a relational perspective actors are positioned as a part of ‘social discourses and practices, and cannot be conceived as rational and mechanistic economic entities’ (Yeung 2005:41). Relationality, as Yeung argues, refers to the fundamental quality rooted in ‘an iterative process of drawing interconnections between two or more discrete categories and phenomena that may not necessarily be binaries’ (Yeung 2005:44). In light of the ‘relational turn’, Boggs and Rantisi, suggest that the relationship that actors have with others, and the consequence of practices are worthy of inspection (Boggs and Rantisi 2003).

Adopting a different stance to rationalism, relational approaches suggest that actors act according to a range of goals, strategies, feelings and emotions (Jones 2013). This suggests that actors are not just motivated by self-interest or utilitarianism, but rather motivation may include a range of ethical frames such as deontological ethics, altruism, and ‘relational ethics’ (Austin 2008; Bauman 1993). Deontological ethics locates morality in norms and rules, and contends that certain actions are morally wrong or right (Shafer-
Landau 2013; Staveren 2007; Tännsjö 2013). Kant, perhaps the most well known deontologist, held that the consequences of an action were irrelevant in defining the moral worth of that action (Shafer-Landau 2013; Tännsjö 2013), and through his ‘categorical imperative’ held that people should never be treated as a means to an end (Kennedy and Lacniak 2014). While I situate deontological ethics closely to ‘relational order’, the precepts it holds are based on the idea that moral rules come through ‘reason’ that are based on ‘maxims’ — a general rule or principle (Waluchow 2003). In that respect it could be considered as a ‘rational’ ordering of ethics because, in some sense it is based on the standardisation of ethical rules. Tännsjö (2013) argues that one reading of Kant’s categorical imperative sits closely to rule-utilitarianism — the idea that ‘any code of rules is evaluated in terms of how much good could reasonably be expected to result from a code’ (Hooker 2013:428). However, throughout this thesis I suggest that deontological ethics is close to a relational ordering of ethics because, rather than action based purely on self-interest, the deontological ethical position defines moral action on the basis of the process. Altruism, as opposed to rational egoism, is based on the notion that the interest of others ought to take precedence over self-interest (Post et al. 2002). ‘Relational ethics’ situates ‘ethical action explicitly in relationship’ (Austin 2008:749).

Sunley argues that the term ‘relational’ has dual meaning ‘ranging from specific forms or relationships, to any exchange, agreement or interaction between two or more people’ (Sunley 2008:4). The term relational is also used to refer to modes of economic coordination based on strong ties in long-term reciprocal relationships (Sunley 2008). The relational approach to social action has been critiqued for exaggerating collaborative and cooperative aspects of successful regional and urban economies (Sunley 2008). Others also argue that rather than the demise of bureaucracy, ‘what has emerged is not the end of bureaucracy, but a more complex and differentiated set of post-bureaucratic (or neo-bureaucratic) possibilities that have had the effect of undermining some distinctions previously deemed incontestable’ (Harris, Clegg, and Höpfl 2011:n.p). Bureaucracy and the industrial economy, as Castells himself argued, has not been replaced but subsumed into the ‘new economy’ (Castells 2010). In the network form some of the elements of organisation have changed — such as changing styles of management away from rational towards relational aspects. However, some
things have not — such as the need to assign people to duties, the use of rules, and a ‘legitimate order’.

There is a risk that relational thought ‘rather than a provocation that forces us to think again, relational thought risks becoming a routine to be mastered and repeated. The danger is that in offering a ‘relational’ account of the social, it is easy to stop short of a set of subsequent questions’ (Anderson et al. 2012b:172). The questions ought to be not how relational thought operates, in isolation, but how it interacts and reacts to rational thought. This question is pertinent because in organisational contexts where relational order may operate throughout its networks, the functioning of bureaucracies requires rational order. Equally, this question is pertinent because protocols rely on the existence of not one or the other, but both rational and relational order.

This thesis, embraces the bureaucratic ‘machine’ for conceptually exploring rational order in/through organisations. However, rather than use the ‘organism’ metaphor, to overcome some of the Deleuzian critiques of the ‘machine’ metaphor, I opt instead to use the term ‘ensemble’ to capture the idea that there is a relationship between the parts and the whole, in ways that allow for the autonomy of the parts. In this respect, this thesis supports Olsen’s argument:

> that for those interested in how contemporary public administration is organized, functions, and changes, it is worthwhile to reconsider and rediscover bureaucracy as an administrative form, an analytical concept, and a set of ideas and observations about public administration and formally organized institutions (Olsen 2005:2).

Others have explored the interactions between rational and relational order through various guises (Cao and Lumineau 2015; Costa and Bijlsma-Frankema 2007; Das and Teng 1998, 2001; Galloway and Thacker 2004; Galloway 2004; Ortega Lozano 2009; Poppo and Zenger 2002; Sundaramurthy and Lewis 2003; Vlaar, Van den Bosch, and Volberda 2007; Weibel 2007). Cao and Lumineau’s study, for example, focused on the dynamic interplay between contractual and relational governance in interorganisational relationships (or supply-chain management as they call it) (Cao and Lumineau 2015). Through their analysis, Cao and Lumineau, argue that studies on the dynamic interplay between contractual and relational governance can be divided into those who suggest
that one form of governance ‘substitutes’ for another, and those who suggest that contractual and relational governance are ‘complimentary’ to one another (Cao and Lumineau 2015). Similarly in a study by Vlaar, Van den Bosch and Volberda (2007) the argument is made that cooperating parties may coordinate their relationship through trust or formalisation which complement one another and have a variety of ‘performance effects’ (Vlaar, Van den Bosch, and Volberda 2007:414). As Vlaar et al. argue:

[...] trust and distrust during initial stages of cooperation leave strong imprints on the development of collaborative relationships in later stages of development by elucidating their impact on formal coordination and control, interorganizational performance, and the interpretations that managers attribute to the behavior of their partners (Vlaar, Van den Bosch, and Volberda 2007:409).

This thesis suggests that rational and relational orders are complementary to one another, and that this complementarity is aptly studied through an analysis of protocols. The existence of protocols – and their coupling with university ethics reviews and contracts and agreements – indicate that the bureaucracy of command and control exists, but that unlike Weber’s bureaucracy, actors can engage in more flexible actions and interactions. This is the dynamic tension between rational and relational order that I explore in detail in Chapters Four, Five, and Six. It is also a shift from agent-principal relationships, based on authority, towards steward-principal relationships based on cooperation, which is examined later in this chapter. I turn my attention now to a brief overview of the development of the CRC system in Australia. This is provided here to foreground the analysis of the DKCRC in Chapter Four.

**Development of Cooperative Research Centres (CRCs) in Australia**

In Australia in the late 1980s and early 1990s, closer relationships between academia and business were facilitated by the State through the release of The Dawkins Review¹⁴ ‘white paper’ (policy) (Commonwealth of Australia 1988). It challenged the belief that teaching and research are inexplicably linked, and set a new system of funding with greater emphasis on accountability and institutional management (Wood and Lyn 2002). In a similar period the Australian State expedited greater ties between industry and university, which encouraged collaboration in research, through the introduction of the
Organising actors

150% Taxation Concession Scheme and the Grants for Industry Research and Development (GIRD) Program, and the establishment of Cooperative Research Centres Program (CRC Program), Australian Research Council (ARC), industry-linked postgraduate awards, and Collaborative and SPIRT Research Grants (Harman 2001). Through providing incentives for cooperative research, each of these programs was designed to boost Australia’s capacity to produce high quality research and high quality knowledge for the ‘knowledge society.’

The CRC program — established by the Labor Government, and based on Chief Scientist Professor Ralph Slatyer’s design — was instigated to reduce geographical and institutional separation of scientific and technological resources (Slatyer 1994). The separation of these resources in Australia made it difficult to create research clusters (a necessary requirement to keep pace with international progress), and resulted in replication of facilities (Slatyer 1994). The CRC Program was introduced to strengthen Australia’s research and development (R&D) performance in response to: a research funding model that did not result in the establishment of integrated research teams, to link scientific and technological advances to the economy, and concern that Australia’s undergraduate and graduate programs were below international standards (Slatyer 1994). The CRC Program sought to encourage public and private sector research cooperation; provide an environment for research teams to gather while still allowing members to maintain their own affiliations; focus on challenging and emerging research fields; locate CRCs near universities; include research users in the planning and operation of the centres; appoint an experienced and highly regarded researcher as the Director of each centre; and to prepare PhD graduates for non-academic careers (Commonwealth of Australia 2008; Slatyer 1994)(see also Table 1). Within the model was the hope that CRCs would demonstrate how greater cooperation benefits and contributes to Australia’s national research efforts (Slatyer 1994).
Table 1 The concept underlying the CRC program as conceived by Slatyer (1994)

<table>
<thead>
<tr>
<th>Concept</th>
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<tr>
<td>To create a system of world-class applications-oriented research centres by linking together outstanding research groups from the public and private sectors.</td>
</tr>
<tr>
<td>To enable each participating group to retain its separate institutional affiliation, but each Centre to constitute a collaborative integrated research team.</td>
</tr>
<tr>
<td>To focus the research on challenging research fields and areas which underpin existing or emerging industry sectors.</td>
</tr>
<tr>
<td>To co-locate the groups participating in each Centre, wherever possible, to promote effective cooperation and to enable expensive facilities to be used efficiently and without unnecessary duplication.</td>
</tr>
<tr>
<td>To locate the Centres on or adjacent to university campuses wherever possible, so as to encourage precinct development around universities and enable the Centres to contribute as fully as possible to the strengthening of educational programs.</td>
</tr>
<tr>
<td>To involve research users in the planning and operation of each Centre so as to enhance the effective utilisation of the research results.</td>
</tr>
<tr>
<td>To ensure that each Centre was led by a Director who would be an experienced and highly regarded researcher with appropriate management skills.</td>
</tr>
</tbody>
</table>

(Source: Slatyer 1994:148)

CRCs are publicly funded research networks with partners contributing cash and ‘in-kind’ support (Commonwealth of Australia 1996). The CRC program is positioned as the ‘critical agent in changing academic attitudes to TT & C [technology transfer and commercialisation] by universities’ (Commonwealth of Australia 1999b), and positioned as a ‘significant component of the national innovation system’ aimed at ‘supporting medium to long-term collaboration between producers and end-users15 of research’ (Commonwealth of Australia 2013:2). The CRC Program provides funding to ‘build critical mass in research ventures between end-users and researchers which tackle clearly-articulated, major challenges for end-users’ and ‘pursue solutions to these challenges that are innovative, of high impact and capable of being effectively deployed by the end-users’ (Commonwealth of Australia 2013:2). The CRC program ‘seeks to stimulate a broader education and training experience for post-secondary students, particularly research students, to enhance their employment prospects, providing them with the skills needed to utilise research outputs and produce innovative end-user centric solutions’ (Commonwealth of Australia 2013:2).

A small body of literature exists that is dedicated to analysing Australian CRCs (Garrett-Jones et al. 2005; Garrett-Jones, Turpin, and Diment 2010; Harman 2002, 2004; Howard Partners 2003; Pitt, Cox, and Manathunga 2010; Ridge 2000; Slatyer 1994; Turpin 1997; Turpin and Garrett-Jones 2010; Turpin, Garrett-Jones, and Wolley 2011).
This body of literature suggests that competitive tensions exist in CRCs, and that this tension makes CRCs ‘hybrid organisations’ or ‘parasitic’ organisations (Garrett-Jones et al. 2005; Garrett-Jones, Turpin, and Diment 2010). They are ‘hybrid’ because they embody the culture of each of some of the partner organisations, and they are ‘parasitic’ because ‘their existence depends on functioning and supportive partner or ‘host’ institutions, whose resources they entrain’ (Garrett-Jones et al. 2005:536).

CRCs differ from other organisations in that relationships require formalisation of joint venture partnerships (Howard Partners 2003). They are ‘essentially managed relationships’ (Howard Partners 2003:iv). They start as bottom-up collaborations on trust-based relationships between organisations (Howard Partners 2003). The success of a CRC is based on leadership not structure (Howard Partners 2003). For CRCs ‘the struggle to move from institutionalising forms of cooperation and interaction to organising purposeful knowledge co-production and use activities remains ongoing’ (Turpin, Garrett-Jones, and Wolley 2011:94).

Research organisations use a variety of tools, including intellectual property rights and branding, to ensure their position within research markets. They also utilise formalised ethical research review processes to ensure compliance with national ethical research standards. The DKCRC used a reworked form of intellectual property rights in the IIPP to make clear links with the idea that Indigenous knowledge has a system of ownership around it. This is discussed in further detail in Chapter Five. Through Chapter Seven I explore how the DKCRC ‘desert knowledge’ brand behaved as a ‘knowledge brand’ (Costa and Bijlsma-Frankema 2007; Das and Teng 1998, 2001; Weibel 2007), through communicating a set of ‘skills, competencies and methodologies’ (Eppler and Will 2001:1), and a ‘place brand’ through marking the desert as a particular brand (Hanna and Rowley 2011). The DKCRC, like other organisations, used branding to differentiate itself from other research organisations, through creating a particular ‘identity’ and identifying with particular values and meanings. The next section provides an overview of some of the ways that actors within organisations and computer networks are described.
Actors in organisations: self-interest and altruism

This section provides an overview of the ways that actors are considered in organisational contexts. In the context of computer networks, I explore ‘hackers’ as a moral genre of subversion. Through theories of the firm, I explore the agent-principal and steward-principal relationships that exist through organisations. And in the context of news organisations and universities, I explore the gatekeeper as a ‘filtering mechanism’ and a ‘chain of regulatory acts’ (Kavelin 2008).

Hackers: moral genres

Protocols seek to regulate access to knowledge. However, even with the introduction of IPRs some individuals still seek to subvert the rights assigned to knowledge. The nature of resistance has changed, and as Galloway argues, ‘to live in the age of protocols requires tactics drawn from within the protological sphere’ (Galloway 2004:151). Resistance to the idea that knowledge has property rights, or that events or networks have regulated access points, is considered in different ways in various disciplines. In computer networks those who resist protocols are called ‘hackers.’

Hackers specifically seek to subvert or circumvent protocols. Hackers are represented in both positive and negative positions (Coleman and Golub 2008; Galloway 2004). The literature on hackers ‘tends to collapse hacking into a moral binary in which hackers are either lauded or denounced’ (Coleman and Golub 2008:256). For example, they are positioned as terrorists or libertarians (Galloway 2004); militants or merry pranksters (Woo, Kim, and Dominick 2004) and, dangerous criminals or highly skilled actors (Skibell 2002). This binary conception of hackers is questioned by Coleman and Golub, who argue that there are a diverse range of ‘moral genres of hacking’ and rather than just supporting access to information, that hacking is based on free speech, privacy, meritocracy and the power of the individual (Coleman and Golub 2008:256). This movement between different positions is the movement between ‘moral registers’ (Coleman and Golub 2008:256).

Caught up in discussions on contemporary liberalism around whether there should be respect for information as private property, one of the motivations of hackers is the idea that information ought to be free and have open access (Coleman and Golub 2008). This is a ‘countervailing force’ to the increasing use of intellectual property (and other
measures) to control and ‘enclose’ the use of information (Söderberg 2010:162). Yet not all hackers are motivated by access to information, the other motivations of hackers is reported to include: beating the system, peer recognition, bragging, romantic, nationalism, ethnicity, religion, stopping pornography, and meritocracy, innovation (Castells 2004; Coleman and Golub 2008; Woo, Kim, and Dominick 2004).

**Stewards and agents: the trust-control nexus and intrinsic and extrinsic motivation**

Discussions of the relationship between ‘owners’ and ‘managers’ in organisation (in the corporate form) follow two trajectories. One trajectory, it the agent-principal relationship, informed by control approaches (Sundaramurthy and Lewis 2003), which assumes that in their relationship with the owners of shares (the principal), the manager (the agent) operates through utilitarian self-interest (Alchian and Demestz 1972; Jensen and Meckling 1976; Spremann 1987). The second trajectory, a critique of the agent-principal relationship, and known as the steward-principal relationship, proposes that the manager (the steward) acts altruistically (in the interest of others) in relation to the owners of shares (the principal) (Davis, Schoorman, and Donaldson 1997; Hernandez 2012; Le Breton-Miller and Miller 2009; McArthur 2012; Schillemans 2013; Van Slyke 2006; Wolfson 2012). The agent-principal and steward-principal concepts are not confined to corporations, and can be applied to any relationship such as employee and employer, and patient and doctor (Spremann 1987). This section provides an overview of the agent-principal and steward-principal relationships and the assumptions each of these models make about the actions and motivations of agents, stewards, and principals.

Stewardship theory is a response to agency theory. Critics of agency theory argue that agents, rather than act in self-interest, can and do act in the interest of others (Albanese, Dacin, and Harris 1997; Davis, Schoorman, and Donaldson 1997; Hernandez 2012; Le Breton-Miller and Miller 2009; McArthur 2012; Van Slyke 2006; Wolfson 2012). The tension between utilitarianism and altruism is a central angst of Adam Smith’s theory that he never resolved (Lumley 2013). Stewardship theory posits that ‘the model of man is based on a steward whose behavior is ordered such that pro-organizational, collectivistic behaviors have higher utility than individualistic, self-serving behaviors’ (Davis, Schoorman, and Donaldson 1997:24). Stewards are those actors in organisations who go beyond competitive self-interest (Davis, Schoorman, and Donaldson 1997;
Hernandez 2012; Le Breton-Miller and Miller 2009; McArthur 2012; Schillemans 2013; Van Slyke 2006; Wolfson 2012). When the interests do not align between the actors the ‘steward’ will place higher value on cooperation than self-interest (Davis, Schoorman, and Donaldson 1997). As I discuss in Chapters Six and Seven, even within the confines of a contract, where one could assume that actors will act in their own self-interest, the research practices of some actors were cooperatively based moving toward altruistic behaviour, rather than self-interest.

Davis, Schoorman and Donaldson (1997) argue that the assumptions between agency theory and stewardship theory differ through psychological and situational factors. This distinction is used across the literature on steward-principal relationships (Cuevas-Rodríguez, Gomez-Mejia, and Wiseman 2012; Hernandez 2012; Kuppelwieser 2011). Psychological differences include assumptions about motivation, identification, and the use of power in hierarchical relationship, while situational differences include assumptions about the management philosophies employed and the culture of organisations (Davis, Schoorman, and Donaldson 1997). Motivation, for agents, is based on extrinsic factors such as market value, while for stewards it derives from intrinsic factors such as responsibility, opportunities for growth and self-actualisation (Davis, Schoorman, and Donaldson 1997; Hernandez 2012; Kuppelwieser 2011). Identification, for stewards, is aligned with the organisation, while for agents it differs. Power use differs with agents relying on institutional power, and stewards on personal power (Davis, Schoorman, and Donaldson 1997). With regards to situational factors, agency theory is orientated towards control, while stewardship theory is orientated towards collaboration (Davis, Schoorman, and Donaldson 1997; Sundaramurthy and Lewis 2003). Because stewards work from a motivation for others, ‘control mechanisms may be not only unnecessary but also counterproductive’ (Hernandez 2012:173).

Albanese et al. (1997) argue that in exploring the principal-agent relationship a practice focus should be taken which allows for the existence of principal-agent and principal-steward relationships in the same organisation overtime. ‘We must view agency relationships through a lens that can accommodate the shifting interest alignment. In fact, today’s “agent” may be tomorrow’s “steward”, or vice versa,’ (Albanese, Dacin, and Harris 1997:4). This suggests that the influence of motivations and responsibilities
change over time and even space. This is the same idea put forward by Davis et al. (1997) and is one that I support in this thesis.

**Gatekeepers: filtering knowledge and chain of regulatory acts**

The idea that actors behave as ‘gatekeepers,’ through controlling the flow of information, is used broadly across the literature in a variety of contexts (Braithwaite 1997; De Roeper 2008; Ettlie and Elsenbach 2007; Flaxman, Muir, and Oprea 2009; Holmes 2007; Howard, Thwaites, and Smith 2001; Kavelin 2008; Pattenden 2011; Smallacombe 1997-1998; Stuart and Whittam 2010; Willems 2001). This section explores how gatekeeping has been conceptualised in two areas of inquiry: firstly, through discussions of the role of universities in a knowledge economy and secondly, in the role of editors in media and other organisations.

Some commentators position universities and other entities as gatekeepers of Indigenous knowledge (Kavelin 2008; Smallacombe 1997-1998). Kavelin argues that gatekeeping includes two functions. Firstly, it is a ‘primary institutional location’ through which knowledge flows from Indigenous communities to transnational corporations who appropriate the knowledge and transform it into commercially valuable products (Kavelin 2008:39). Secondly, as Kavelin argues, gatekeeping is a ‘filtering mechanism’ for the ‘social centres for the legitimation of particular types of knowledge systems’ (Kavelin 2008:39). ‘Gatekeepers’ who control access to gates are positioned as those who control the flow of information or outcomes (Ettlie and Elsenbach 2007), to ‘conserve cultural values’ (Howard, Thwaites, and Smith 2001) or have the ‘potential to sabotage any policy changes’ (Fopp 2008:26). Universities are gatekeepers in two key ways. They are significant links in a ‘chain of regulatory acts’ in the intellectual processes, and they act as ‘filtering mechanisms’ that ‘determine the relevance and value of cultural models of epistemology’ (Kavelin 2008:39). The field of media and communication has focused considerable attention on the concept of gatekeeping (Barzilai-Nahon 2008; Baye and Moran 2001; Bui 2010; Corra and Willer 2002; Lewin 1947; Rosengren 1997; White 1964). In mass communication channels, gates and gatekeepers are used as metaphors to explain focal points of social change in communities (Barzilai-Nahon 2008; Lewin 1947; White 1964). Much of the theoretical basis of gatekeeping derives from Kurt Lewin’s 1947 article on group dynamics (Barzilai-Nahon 2008; Lewin 1947).
Lewin’s argument was based on trying to make changes to families’ food habits (Lewin 1947). In order to affect large social change, Lewin argued that it is important to first look for people in ‘key positions’. To identify these ‘key positions’ Lewin argued that food came to the house through a number of ‘channels’. From there, ‘we have to ask what are the factors which determine the movement of food into and through the channels’, ‘what are the patterns of forces in the various sections’, and ‘what are the main variables which determine the forces’ (Lewin 1947:144). For Lewin, within these channels certain areas function as ‘gates’. Forces before and after the ‘gate region’ are different, so that passing of the ‘thing’ through the whole channel depends on what happens in this region. Gates are governed by impartial rules or gatekeepers, where the later are individuals or groups in positions of power who decide what gets let ‘in’ and what stays ‘out.’ Thus, ‘understanding the functioning of the gate becomes equivalent then to understanding the factors which determine the decision of the gate keepers and changing the social process means influencing or replacing the gate keeper’ (Lewin 1947:145).

The conception of gatekeeper/ing put forward by Lewin is similar to the notion used across a variety of fields. ‘Gatekeepers’ are positioned as actors who: act as ‘cultural brokers’, ‘bridges’ or ‘intermediaries;’ have certain knowledge and skills that allows an ‘in’ into each of the groups (Flaxman, Muir, and Oprea 2009); perform a ‘transcoding’ or ‘translation’ function (Morrison 2008); are specifically concerned with assisting others to open existing gates – for example mentors who assist with opening gates for career advancement (Holmes 2007); determine who is ‘inside’ or ‘outside’, or who can become a member, of a particular group (Holmes 2007); and enforce an existing ‘institutional power structure and organisational hierarchy’ (Holmes 2007:1998). In the art world, ‘cultural gatekeepers’, serve the three masters of artist, audience and financial investor, act as mediators between the masters, and have responsibilities in negotiating conflicting interests (De Roeper 2008).

**Conclusion: reflections on mapping on the organisational terrain**

This chapter laid the theoretical groundwork for exploring protocols in organisations and how actors may enact protocols. Protocols are increasingly proposed as tools to control the flow of Indigenous knowledge and to ensure that Indigenous knowledge is accessed based an Indigenous ethics. As I discussed in the first part of this chapter
Organising actors protocols to protect Indigenous knowledge are often described as protocol-as-etiquette and protocol-as-guide. Drawing on the critique of protocols in other fields, I sought to provide a wider foundation from which to describe, understand and theoretically unpack protocols. In this regard, I provided an overview of some of the ways that protocols have been described and considered as protocol-as-road rules and protocol-as-telephone conversations in computer networks; protocol-as-recipes in laboratory settings, and protocol-as-chain of command in policing and the context of courts. I drew upon Galloway’s (2004) analysis of protocols in computer networks to explore protocols (established to protect Indigenous knowledge) as a contradiction between rational and relational order. In Chapters Five and Six I will apply the protocol-as-recipe metaphor to highlight the ‘ingredients’ of the DKCRC IIPP and explore how they were assembled in ways that rationally and relationally ordered research practices.

Throughout this chapter I discussed how different authors conceptualise organisations and coordination rationally as the bureaucratic ‘machine’ and agency-principal relationships influenced by utilitarianism and contractarianism, and relationally as the post-bureaucratic ‘organism’ influenced by altruism, relational ethics and deontological ethics. Through this discussion I allude to the idea that rational and relational order sit in a dynamic tension with one another, and that actors themselves behave both rationally and relationally in organisations.

I explored some of the ways that actors enact protocols, and behave more generally in organisations through the notions of ‘hacker’, ‘stewards’ and ‘gatekeepers’. The analysis of the ‘hacker’ focused on the motivation of actors who circumvent protocols in computer networks through a variety of ‘moral genres’ (Coleman and Golub 2008:256). Through the analysis of ‘hackers’ I seek to provide the basis for a discussion in Chapter Seven where I suggest that actors in research organisations enact protocols as ‘gatecrashers’, which in some modes resembles the ways that ‘hackers’ circumvent protocols in computer networks. The analysis of ‘stewards’ alluded to the idea that actors are motivated by altruism, and the analysis of ‘gatekeeper’ alluded to the idea that actors ‘filter knowledge’ and take up a position as part of a regulatory chain of command. Through the ‘steward’ and ‘gatekeeper’ discussion I lay the basis for a more in-depth analysis in Chapter Seven of the way that actors enact protocols as ‘guardians’ and ‘gatekeepers’ in research organisations.
Chapter Two

The next chapter provides an overview of the methodological approach taken in this thesis including the treatment of protocols as protocol-as-assemblage, the focus on practices, and the handling of Indigenous knowledge as something that sits as an assemblage of rational and relational thought.
Chapter Three. Ordering, practices, and Indigenous knowledge: a plan of inquiry

The orchid deterritorializes by forming an image, a tracing of a wasp; but the wasp reterritorializes on that image. The wasp is nevertheless deterritorialized, becoming a piece in the orchid’s reproductive apparatus. But it reterritorializes the orchid by transporting its pollen. Wasp and orchid, as heterogeneous elements, form a rhizome. It could be said that the orchid imitates the wasp, reproducing its image in a signifying fashion (mimesis, mimicry, lure, etc.) (Deleuze and Guattari 1987:10).

Introduction

I begin this chapter with the quote by Deleuze and Guattari to highlight an idea that is stated in relation to protocols, and to map the method I use in this thesis to conceptualise protocols. Protocols are assemblages of ‘components in relation’ (Allen 2012:191), or entities that form and re-form as they are enacted. ‘An assemblage’, as Anderson, Kearnes, McFarlane and Swanton argue, ‘is both the provisional holding together of a group of entities across differences and a continuous process of movement and transformation as relations and terms change’ (Anderson et al. 2012b:177).

Protocols, in research bureaucracies, work when they are connected with other entities such as research ethics and legal systems of contracts and agreements. Protocols operate in a similar way to the orchid and the wasp outlined in the quote above. Yet, protocols also become entangled in other entities. In their analogy, Deleuze and Guattari omit the wider ecology that the orchid and wasp are a part. If the wasp takes a different flight path to the orchid it may, for example, become entangled in a spider’s web. Protocols in research organisations do not sit as discrete entities disconnected from other parts of the organisation. Protocols, like the wasp on the way to the orchid, can become entangled in other features of the organisation. In DKCRC, with an imperative to grow capital, the IIPP became entangled in the corporate branding and story telling.
This chapter provides an overview of the plan of inquiry and the tools that were used to understand how protocols order research practices and Indigenous knowledge, how organisations and individuals enact protocols, and how protocols become entangled in bureaucratic brands and narratives. This chapter maps and explores the key aspects of ordering (assemblages), practices, and Indigenous knowledge.

**Knowledge/s: ‘Indigenous knowledge’ as a category**

The case study in this thesis (the IIPP) includes Indigenous knowledge as the category of ‘Indigenous intellectual property’. To provide some conceptual clarity to the thesis, this part of the chapter provides an overview of how Indigenous knowledge is conceptualised through, what might be considered, a sociology or discourse of science, Western knowledge and Indigenous knowledge, and how this discussion sits in relation to the one occurring in philosophy of knowledge that makes distinctions between rationalism and empiricism. This section provides the basis for the remainder of the thesis on how I consider Indigenous knowledge, and for the discussion in Chapter Five on how the IIPP conceptualisation of Indigenous knowledge as ‘Indigenous intellectual property’ rationalised Indigenous knowledge.

**Indigenous knowledge/s: exploring the conceptual contours**

Attempts to define Indigenous knowledge are linked to broader discourses on the rights of Indigenous peoples who have created a ‘resistance identity’ (Castell 1997), which challenges the assumptions of globalisation (Daes 2001), and is about the control of place (Castree 2004). Part of the identity is based on resistance to capitalist modes of production underpinned by neoliberalism, where the environment is a resource to be exploited and people are viewed as individuals. Through a capitalist and neoliberal lens Indigenous knowledge is viewed as a commodity that can be exploited for the production of goods (such as pharmaceutical, neutraceuticals, and tourist activities). Similarly, Indigenous peoples and their knowledge are positioned as sources of information for the ecological imperative to find solutions to climate change and biodiversity loss; which has contributed to the desire for ‘bridging scales and epistemologies’ (Reid et al. 2005).

Indigenous knowledge is a term that attempts to capture, under one label, the large diversity of knowledge systems of Indigenous peoples. The term, to a certain extent, is
reductionist. But as Kelly argues, ‘although defining something such as TK [traditional knowledge] is reductionist and begins to arbitrarily limit the topic, it is still useful to present a level of definition with the purpose of building understandings, rather than as an endpoint’ (Kelly 2005:8). This sentiment was echoed years later by Whyte who argues that, rather than defining Indigenous knowledge, the more important aspect is exploring the role that Indigenous knowledge ‘plays in facilitating or discouraging cross-cultural and cross-situational collaboration between Indigenous and non-Indigenous institutions’ (Whyte 2013:2). The rest of this section provides an overview of some of the claims that are made about Indigenous knowledge. This is done to provide a working conceptualisation of Indigenous knowledge for this thesis. Beyond the loose notion that Indigenous knowledge is knowledge that Indigenous peoples ‘own’, I do not attempt to provide a definitive definition of Indigenous knowledge. My focus in this thesis is on protocols, as such it is outside the scope of this thesis to attempt to provide a definitive definition, because such an undertaking would require an in-depth engagement with a broad range of Indigenous peoples, and with philosophies of knowledge.

Situated knowledge: localised practices of traditions, customs and beliefs

Indigenous knowledge is often defined as Indigenous practices of traditions, customs and beliefs (Christie 2006; Davis 2008; Walsh, Dobson, and Douglas 2013), connected to place, the ‘local’, and is defined, by some, as ‘situated knowledge’ (Briggs 2013; Muir, Rose, and Sullivan 2010; Sillitoe and Marzano 2009; Turnbull 2009; Whyte 2013). This definition includes beliefs that humans are not separate from ‘nature’, nature is sacred or has a living force and is more than the sum of material parts, and Indigenous knowledge includes aspects that are secret or sacred (Berkes 1999; Gervais 2003; Janke 2009). Berkes and Berkes refer to this conceptualisation of Indigenous knowledge as the ‘knowledge–practice–belief complex’ (Berkes and Berkes 2009:7). In Australia, for example, these ideas were captured in the term ‘the dreaming’ — based on the work of anthropologists Spencer and Gillen — to refer to the mythical beings which gave form to earth (Berndt 1974).

A ‘localist’ definition of indigenous knowledge suggests ‘multiple performative and practice-based dimensions’ (Turnbull 2009:3). The ‘localist’ perspective, argues Turnbull, has two aspects where knowledge is ‘the product of human movement, actions, practices and protocols’, and ‘not abstract entities, they are the conjoint practices
of groups of people, and shape the world they inhabit’ (Turnbull 2009:3 emphasis added). Performative definitions highlight the dynamic and adaptive aspects of Indigenous knowledge (Berkes 1999; Daes 2001; Posey 2002; Turnbull 2009). The idea of ‘situated knowledge’, borrows from American pragmatism, phenomenology and ethnomethodology, feminist, postcolonial and Marxist tradition that ‘all knowledge is produced in specific circumstances and that those circumstances shape it in some way’ (Turnbull 2009:3). The notion of ‘situated knowledge’, as Harvey argues (1996) borrowing from Rose, is construed in two ways — the ‘vulgar’ and the ‘dialectical’ (Rose 1997:305). The vulgar definition is based on individual biographies as ‘separate and unrelated difference’ (Harvey 1996). In the vulgar use of ‘separateness,’ difference is treated as biographically, socially, institutionally and geographically determined. This construction, argues Harvey, generates political difficulties, and makes it difficult for us to step outside of our own identities, learn another’s language, or to learn ‘what the condition of being “the other” is all about’ (Harvey 1996:354). On the other hand, dialectical constructions of situatedness are based on a ‘dialectical power relation between oppressor and oppressed’, and becomes a ‘play of difference’ (Harvey 1996:354, emphasis appears in text). Through this, according to Harvey, it is possible to argue that individuals are ‘heterogeneously constructed subjects internalizing “otherness” by the virtue of their intricate relations in a highly diversified world (Harvey 1996:355).

Through biodiversity conservation discourses, terms such as ‘traditional ecological knowledge’ and ‘Indigenous ecological knowledge’ are attempts to clearly indicate that knowledge applies to ecological systems in particular places (Berkes 1999; Turner, Ignace, and Ignace 2000; Whyte 2013). Likewise, debates on ex situ and in situ conservation of biological resources and associated Indigenous knowledge (Laird 2002) place differing emphasis on the role of place associated with Indigenous knowledge. Those arguing for ex situ conservation, who advocate for conservation on biological resources and associated knowledge through databases or gene banks (Laird 2002), would downplay the role of place in Indigenous knowledge, while advocates of in situ conservation (Laird 2002) argue that place plays a critical role in defining knowledge and protecting knowledge and that in order to adequately protect Indigenous knowledge it needs to be conserved in place (Laird 2002).
Guardians and stewards: relational obligations from customary law

Indigenous knowledge systems are often defined as including the idea that Indigenous peoples have relational obligations to each other and nature (Berkes and Berkes 2009; Pierotti and Wildcat 2000; Whyte 2013). Relational obligations derive from rules, norms and protocols (referred to as customary law in Australia), which act as governance arrangements over Indigenous knowledge (Christie 2006; Janke 2008; Mackay 2009). In Australia, for example, customary law has figured in the high profile copyright dispute through the Bulun Bulun & Anor v R & T Textiles Pty Ltd case (the Bulun Bulun case) over the reproduction of a waterhole design by John Bulun Bulun, a Ganalbingu man of Arnhem Land, which was printed in Indonesia and imported into Australia (Janke 2008; Mackay 2009). In this case Judge Von Doussa found that a fiduciary relationship existed (one based on trust) between John Bulun Bulun and the Ganalbingu clan, and that customary laws influence what the artist can do with the work embodying the Indigenous knowledge ‘in a way that he had to discuss and negotiate use of traditional knowledge with relevant persons in authority within his clan’ (Janke 2008:19). What the Bulun Bulun case highlighted, and is often discussed in relation to defining and the use of Indigenous knowledge, and thus to customary law, is the tension between individual and communal ownership of this knowledge and the obligations related to this ownership.

Relational obligation is often captured through the terminology of ‘guardianship’ or ‘stewardship’ (Argumedo et al. 2011; Carpenter, Katyal, and Riley 2009; Kolig 2002; Lai 2014; Lotz 2002; Stephens, Parkes, and Chang 2007; Wade 1999; Whyte 2013). Guardianship and stewardship lay the foundations on which protocols sit. This was clearly articulated by Argumedo, Asociacion ANDÉS, Potatoe Park Communities and IIED in their ‘Community Biocultural Protocol,’ where they stated:

The fact that biocultural approaches […] are now emerging as useful concepts is testament to the inadequacy of reductionist, disciplinary methods that continue to be the modus operandi of conservation and development research, policy formulation, and action. Mainstream perspectives do not value the role Indigenous Peoples have played historically – and continue to play today – as stewards and guardians, innovators and developers, of their eco- and knowledge systems (Argumedo et al. 2011:19).
In discussing ‘traditional ecological knowledge’, a related concept to Indigenous knowledge, Pierotti and Wildcat however argue that, it ‘is based on the premise that humans should not view themselves as responsible for nature, i.e., we are not stewards of the natural world, but instead we are a part of that world, not greater than any other part’ (Pierotti and Wildcat 2000:1336). In a similar vein, Wade argues that guardianship has its roots in the idea of the ‘noble savage’ which essentialises Indigenous peoples and risks Indigenous peoples being wed to a static identity which is unable to legitimately respond to changes in the broader global political economy (Wade 1999). The close association of Indigenous peoples with the idea of ‘guardian’ also obfuscates the reality that some Indigenous peoples, whether through choice or necessity; use technological innovations from the industrial and post-industrial eras in their farming and livelihood practices (such as, for example, pesticides and firearms) (Wade 1999).

‘Guardianship’, however, has not always had ‘noble savage’ connotations. Plato, for example, used the notion to refer to a class of people required for the Republic. He used the analogy of the ‘watch-dog’ to explore the qualities required in a guardian, and in particular the need to distinguish friend from foe (Lee 1987). Plato argued that the characteristics of a guardian ought to include the characteristics of ‘a philosophic disposition, high spirits, speed, and strength’ (Lee 1987:112), and to be those who are ‘most likely to devote their lives to doing what they judge to be in the interest of the community, and who are never prepared to act against it’ (Lee 1987:112).

There is some merit, I believe, is using the concepts of guardian/guardianship, and not just in application to Indigenous peoples, but to all actors who perform a role in managing or caring for knowledge. The notion of guardianship, as a counter position to self-interest, was apparent in the case study for this thesis. While the concept of ‘guardian’ appears to be theoretically underdeveloped in organisation, as I discussed in Chapter Two, the idea of a counter position to self-interest has been explored widely through the concept of ‘stewardship’ (Arthurs and Busenitz 2003; Davis, Schoorman, and Donaldson 1997; Hernandez 2012; Le Breton-Miller and Miller 2009; McArthur 2012; Van Slyke 2006; Whyte 2013; Wolfson 2012). The notion of guardian provides a conceptual tool for exploring the altruistic motivation of actors. In Chapter Seven, through the guardianship concept, I explore altruistic enactment of IIPP by the DKCRC and DKCRC actors.
In the margins: away from power

Indigenous knowledge is often positioned as marginal or excluded in decision making by policy makers, the State and scientists. This is influenced by colonial thought and predicated on the assumption that this knowledge is of limited value, inferior and a hindrance to development (Agrawal 1995; Brugnach and Ingram 2012; Howitt, Havnen, and Veland 2012; Sillitoe and Marzano 2009; Whyte 2013). While Indigenous knowledge may still occupy a marginalised position in some research areas; under scrutiny the argument that all Indigenous knowledge is marginal does not hold true. There are some organisations that seek to specifically engage this knowledge. For example, the World Bank’s *Indigenous Knowledge for Development Program*, which ran from 1998 to 2007, sought to integrate Indigenous knowledge into World Bank development projects and national policies (Srikantaiah 2012). There are also high profile cases where Indigenous knowledge has been the centre of State and corporate investment in creating a marketable product which can generate high financial returns, and where Indigenous peoples have defended this incursion into their property rights (for example, the cases concerning hoodia, turmeric, and Kakadu plum) (Gulyani and Singh 2010; Orozco and Poonamallee 2014; Robinson 2010; Shiva 2001; Timmermans 2003). Debates and negotiation over biological diversity and associated Indigenous knowledge that, for example, occur in the context of the UN Convention on Biodiversity and the WIPO IGC is predicated on a perception that Indigenous peoples’ knowledge is being mined for data (Davis 2008). These examples suggest that, while the ability of Indigenous peoples to control access to their knowledge may be diminished, Indigenous knowledge itself is not marginalised, rather, it is a highly sought after commodity.

Additionally, in the initial stages of Australian contact and colonisation (from the late 1800s to early 1900s) expeditions by settlers ‘mapped’ the country and observed, recorded and collected knowledge about Indigenous cultural practices associated with plant use (Clarke 2008). Some Aboriginal and Torres Strait Islander peoples facilitated this process through sharing their knowledge, or acting as cultural guides to facilitate communication and knowledge exchange between their own ‘mob’, other tribes and early explorers. As Clarke argues (2008), colonisation in Australia would not have been possible if it were not for the relationships formed between early explorers and Aboriginal and Torres Strait Islander guides such as those formed between Edward
Eyre and Wylie, Ludwig Leichhardt and Charley Fisher, Peter Warburton and Charley, and John Forrest and Winditij.

Knowledge of edible plant species and how to find water in Australia were crucial to the survival of explorers and settlers who were often faced with food shortages and were forced to supplement their food rations with Australian edible plants (Clarke 2008). Aboriginal guides, and the knowledge they held about the country, facilitated exploration and allowed explorers to survive in an environment that would have been otherwise unknown to them. Without access to Indigenous knowledge it would have been impossible for the ‘explorers’ to survive for extended periods.

The initial stages of interest in Aboriginal knowledge resulted in collections of plants being sent to botanical gardens around Australia and to the Royal Kew Botanic Gardens in England (Clarke 2008). A revived interest in Indigenous knowledge emerged in Australia in the 1980s with the release of a number of books and journal articles specifically aimed at capturing, sharing and claiming intellectual property rights to this knowledge (Clarke 2008). Some of these publications (Cribb and Cribb 1981; Lassak and McCarthy 1983; Northern Territory of Australia 1988; Rose 1987; Smith and Kalotats 1985) built on the knowledge gained in scientific surveys from the 1930s to the 1960s through people such as J. Macpherson, L J Webb1 J B Cleland4, T H Johnston5 and N B Tindale who all held positions within universities, and State-based museums and herbariums (Cribb and Cribb 1981; Lassak and McCarthy 1983; Northern Territory of Australia 1988; Sanders 1983; Webb 1960, cited in Northern Territory of Australia 1988; 1969). These examples suggest that Indigenous knowledge is not universally marginalised through time and space, but is heavily sought in particular contexts.

To counteract the perceived exclusion of Indigenous customary practices (including Indigenous knowledge), Altman argues that we ought to conceptualise economies of Indigenous peoples as the ‘hybrid economy’ (2007, 2009). The ‘hybrid economy’, he argues, is constituted by the State, the non-market (customary) and the market (Altman 2009). The hybrid economy model ‘emphasises that the customary or non-market sector has a crucially important role to play in addressing Indigenous poverty in Australia’ (Altman 2009:1). While this is an enticing argument, it runs the risk of marginalising Indigenous economies and knowledge. The assumption in the model is that anything
based on Indigenous knowledge is ‘hybrid’; while the market economy is the real ‘pure’ economy. Theories of ‘hybrid economies’ obfuscate the reality that the market economy is itself a hybrid economy, because it has co-opted information and knowledge (including Indigenous knowledge) from a variety of sources and cultures around the world.

**Use of the term knowledge and Indigenous knowledge in this thesis**

Throughout the thesis I use the terms ‘knowledge’ and ‘Indigenous knowledge.’ While the thesis rests upon a conceptual use of the term ‘Indigenous knowledge,’ in some instances I move interchangeably between it and the word ‘knowledge’ more generally. This is done in order to simplify the discussion. Use of the term ‘Indigenous knowledge’ comes out of political, cultural needs to highlight power imbalances. Its legitimacy, as a term, comes through the simultaneous interaction of Indigenous politics and customary law, and what is commonly referred to as ‘Western science’, and politics. The term ‘Indigenous knowledge’ makes apparent the hidden assumptions in ‘knowledge’, and is used as a means of widening, expanding, and retrofitting the term in a way that provides recognition of the power imbalances and challenges in determining and assigning property rights to intangibles. Indigenous knowledge is often contrasted as an opposing knowledge to ‘Western science’ or ‘science’. By treating these concepts as though they are interchangeable, I seek to overcome distinctions between the concepts. I am conscious that by doing so I am shaking the very foundations of the argument I have constructed. This is one of the difficulties of using language and an issue that I am not able to solve in this thesis.

**A knowledge assemblage**

Any attempt to define knowledge (and Indigenous knowledge) is fraught with difficulties concerning the geographical and historical gaze. Attempts to define Indigenous knowledge must, out of necessity, create an historical narrative of the relationships between Indigenous peoples and ‘others’. Keith Windschuttle’s (2002) historical account of colonisation that Aboriginal history was ‘fabricated’, and the resulting ‘history wars’ in Australia (Macintyre 2003) shows how fragile and politically charged historical accounts of colonisation can be. Rather than attempt to define a working definition of Indigenous knowledge through this thesis my concern is with how the category is treated in protocols through organisations and individuals. The approach
I take in this thesis, to not provide a short precise definition of Indigenous knowledge, is closely related to the approach taken by Whyte who argues that:

*Perhaps what is important is not only defining TEK; rather, what should be additionally explored is the role that the concept of TEK plays in facilitating or discouraging cross-cultural and cross-situational collaboration between Indigenous and non-Indigenous institutions such as tribal natural resources departments, federal agencies working with tribes, and co-management boards (Whyte 2013:2).*

I am more concerned with ‘enforcement’ than definition. In this regard, my thesis is closely aligned with Daes who argued:

*The real issue is not the problem of defining Indigenous cultural and intellectual property or of agreeing that the heritage of Indigenous peoples should, in principle, be protected by law, like other property. The real issue is enforcement, where disputes routinely cross international frontiers and generally involve parties with vastly different levels of power, information, and financial resources (Daes 2001:146).*

While Daes’ refers, in the first instance to ‘Indigenous cultural and intellectual property’, her broader reference to the ‘heritage of Indigenous peoples’ aims to encompass Indigenous knowledge which she considers has associated Indigenous property rights and to which Indigenous peoples ought to be conferred legal protection.

The distinction between Indigenous knowledge and Western knowledge/science is grounded on a politics of difference, and based on creating distinctions between Indigenous ‘selves’ and non-Indigenous ‘others’, whose experiences, ontologies and epistemologies are different (Anderson 2003:11; Harvey 1996; Smith 2000; Smith 1992). Given the ongoing ‘contact’ between Indigenous peoples and ‘others’, it is difficult to maintain the view that Indigenous knowledge and Western knowledge are discretely and uniquely different (Agrawal 1995; Muir, Rose, and Sullivan 2010). Davis, through an exploration of explorer narratives on north-east Queensland from 1770 to 1820, argues that ‘indigenous ecological knowledge and practices have informed, and contributed historically to the formation of scientific and other types of colonial knowledge’ (Davis 2008:24).
Some theorists have argued for a focus on the ‘cultural interface’ (Nakata 2010), the development of ‘dialogue and negotiation, in what might be called a ‘negotiating space’ (Davis 2013:81), and the use of ‘fuzzy logic’ to deal with the complexities of Indigenous-Western knowledges (Berkes and Berkes 2009). We need to explore further ‘questions about the permeability and intersection of all kinds of knowledge’ (Bowrey 2006:80). Instead of trying to conflate knowledge into categories, ‘it may be more sensible to accept differences within these categories and perhaps find similarities across them’ (Agrawal 1995:427). We ought to discuss ‘spheres of knowledge’ (Sillitoe and Marzano 2009) or a ‘knowledge continuum’ (Sillitoe 1998:19), rather than a dichotomy between ‘science’ and ‘Indigenous knowledge’. Conceptualising knowledge as ‘spheres’, however, maintains boundaries around the discrete entities of Western and Indigenous knowledge. Likewise, a ‘knowledge continuum’ requires an axis with two ‘ends’ through which knowledge is placed. However the axis is defined, whether it is between Indigenous knowledge and Western knowledge, or interdisciplinary problems and intercommunity problems, or rational and relational order, requires placing knowledge on a part of the axis that is closer to one or the other variable.

Indigenous knowledge — often positioned as ‘local’ knowledge – is placed in opposition to ‘Western knowledge’ and ‘science’ — itself positioned as universal and global (Agrawal 1995; Bowrey 2006; Muir, Rose, and Sullivan 2010; Whyte 2013). This conflation makes it difficult to engage in broader and deeper discussions on how these knowledge traditions share similarities rather than differ. Labelling knowledge that derives from the ‘geographical fiction’, or the ‘supreme fiction’ as Said (1978) calls it, of the ‘West’ also homogenises the knowledge traditions that develop through this space. As Agrawal argues:

> Western knowledge is supposedly guided by empirical measurements and abstract principles that help order the measured observations to facilitate the testing of hypotheses. Yet, by what yardstick of common measure can one club together the knowledges generated by such western philosophers as Hume and Foucault, Derrida and Von Neumann, or Said and Fogel? (Agrawal 1995:421).

Turnbull makes a similar point, through arguing that Western science ‘was never uniquely Western’ because it included a variety of ancient and modern cultures around
Chapter three

the globe (Turnbull 2000:17-18). Through his exploration of masons, tricksters and cartographers, Turnbull flattens the global-local hierarchy and considers all knowledge, both science and other knowledge, as local (Turnbull 2000). This flattening enables him to make comparisons between science and other knowledges, and to consider knowledge as motely, and an assemblage (Turnbull 2000). As Turnbull suggests, ‘an assemblage is made up of linked sites, people and activities; in a very important a profound sense, the creation of an assemblage is a creation of a knowledge space’ (Turnbull 2000:30-31).

Conceptualising knowledge as an assemblage enables an exploration of knowledge that does not get trapped in the problems of determining which sphere, or which end of a continuum a particular category of knowledge ought to be located. I take a departure from Turnbull’s knowledge assemblage, to employ the term to posit that Indigenous knowledge (and ‘Western knowledge’) is an assemblage of rational and relational knowledge. That is, there are parts of it that are based on standardised practices (and the outcome of standardised practices) and there are parts that based on the flexibility of relationships (and the outcomes of this flexibility). Protocols are one expression of an assemblage of rational and relational knowledge.

Rational – empirical/ rational – relational

Any argument utilising the concept of ‘rational’ is met with challenges. There is the real possibility that confusion can surface when the term ‘rational’ is used, because the concept has wide application across disciplines such as sociology, psychology and philosophy. Weber’s use of the term ‘rational,’ and the one that I employ in this thesis, is problematic because it juts up against the classical philosophical distinctions between ‘reason’ and ‘empirical’ as differing ways of knowing. The rational/empirical distinction in Western traditions harks back to debates that arise from Aristotle and Plato and continues through modern discussions of knowledge. Plato, in critiquing the idea that all knowledge is perception (or based on experience) argued that knowledge is ‘justified true belief’ and based on the notion that ‘forms are the basic objects of knowledge’ (Seirafi 2013). Kant, for example, made the distinction between a priori and posteriori knowledge; between knowledge independent of experiences and based on reason and innate ideas, and knowledge based on sense experiences (Kant 1781). Through this distinction he argued that ‘all our knowledge begins with experience, it by no means
follows that all arises out of experience’ (Kant 1781:n.p). Spinoza, for example, makes the distinction between ‘rational’ and ‘intuitive’ knowledge (Kisner and Youpa 2014), and Popper used the ‘rationality principle’ to argue that humans made rational choices (Lagueux 1993).

To construct his theory of society and economy, Weber made a similar distinction between rational and empirical knowledge as a basis for action (Weber 1968). Weber appeared to draw a line between the philosophical notion of ‘rational’ and ‘reason’, and his own use of the term as a form of standardisation. His use of the term in some ways reference the philosophical use of rational that refers to reason as the basis for knowing (Weber 1968). The distinction that I make in this thesis between rational and relational, and the interplay with each other, in some ways mirrors the rational-empirical distinctions made elsewhere. However, rather than argue that one takes precedence over another, this thesis sits on a proposition that rational and relational knowledge co-exist, as an assemblage, and through assemblages.

**Ordering (directing and assembling): protocol-as-assemblage**

As indicated in the previous chapter, the relational approach risks becoming a technique to be mastered and repeated, which has as its start and end point that entities are relational, or emerge from relations (Anderson et al. 2012b). The relational approach provides limited impetus for exploring relations in more detail, or to ask how we might attend to the plurality of relations (Anderson et al. 2012b). Anderson et al. (2012b) propose the use of assemblage thought, derived from Deleuze and Guattari (1987), to attend to some of the problems of relational thought. Similarly, Allen urges a move beyond relations towards a consideration of the ‘entities that make and are made through relationships within assemblages’ (Allen 2011:190). Allen questions the absence of realism in some of the analysis guided by assemblage thought, and asks us to think through ‘what kind of realism works for assemblage thinking?’ (Allen 2011:190).

‘Assemblage thinking allows us to attend to how these often disparate activities become entangled with one another, but nonetheless have potential agency beyond those interactions which may later become parts in other assemblages’ (Anderson et al. 2012b:173). A number of theorists are turning to assemblage thought to explore and understand the ‘relations’ between entities (see for example: Allen 2011; Anderson et al.
Anderson et al. argue that assemblage thinking is applied in at least three different ways: as a word, concept and ethos to work through questions on the status of ‘relations’ (Anderson et al. 2012b). Dewsbury similarly argued that assemblage has been employed as a ‘mode of thinking’ concerned with materiality and with exploring linkages and connections and the environment in which they emerge (Dewsbury 2011). Assemblage thought is also increasingly utilised to map and uncover relations in distinct empirical studies. This includes, for example from geography, the use of assemblage thought to explore the repair and maintenance of buildings (Edensor 2011), how knowledge mobilises and influences ‘green’ building designs (Faulconbridge 2012), turbulence in orderings of infrastructure mobilities (Cresswell and Martin 2012), and the role of street markets and vending in semi-formal economics (Lauermann 2013). The analysis, and use of, assemblage thought in these studies is predominantly influenced by Deleuze and Guattari’s notion of assemblage (Deleuze and Guattari 1987).

Through their book *A Thousand Plateaus*, Deleuze and Guattari (1987) argue for a rhizomatic approach that maps the assemblage of things. The term ‘assemblage’ is an English translation of the French term ‘agencement’ which Deleuze and Guattari used throughout their book (Deleuze and Guattari 1987; Livesey 2010). An assemblage establishes connections drawn from semiotic flows, material flows, and social flows, and are constituted through horizontal and vertical axis (Deleuze and Guattari 1987). On the horizontal axis an assemblage consists of two parts: the content (bodies, actions and passions), and the expression (collective assemblage of enunciations, of acts and statements) (Deleuze and Guattari 1987). On the vertical axis an assemblage includes territorialities that ‘stabilise it’, and deterritorialisations that ‘carry it away’ (Deleuze and Guattari 1987:88). For Deleuze and Guattari, the territorial (or ‘lines of articulation’) is the first thing to constitute and hold an assemblage together (Anderson and McFarlane 2011:126). The processes of territorial, deterritorialisation and re-territorialisation are ‘relative, always connected, and caught up in one another’ (Deleuze and Guattari 1987:10). Thus, assemblages are provisional as ‘relations may change, new elements may enter, alliances may be broken, new conjunctions may be fostered’ (Anderson and McFarlane 2011:126). The example cited at the start of this chapter, of the orchid and the wasp, posits that through the processes of deterritorialisation and re-territorialisation
a becoming takes place. That is, the orchid becomes-wasp and vice versa. In assemblages ‘becomings’ interlink and push deterritorialisation further (Deleuze and Guattari 1987).

Assemblages are ‘processes of arranging, organising, and fitting together’ (Livesey 2010:18), and they appear as ‘a specific form of relational thinking that attends to the agency of wholes and parts, not one or the other’ (McFarlane and Anderson 2011:162). However, the ‘unity’ of the assemblage is not an organic whole (Anderson et al. 2012b). A Deleuzian reading posits that the ‘organism’ metaphor tends to make concrete the boundaries of compositions (Anderson et al. 2012b; Colebrook 2002). This reading stems from the idea that ‘organisms’ are functionally ordered relations (Keeley 1980), and that the function (or the relationship to the function) creates the boundary of an organism. Anything that is not functionally related does not form part of the organism, and it is at this point that the boundary of the organism is formed. For Deleuze and Guattari, as Anderson et al. argue ‘the emphasis is squarely on the bringing together of heterogeneous entities into some form of temporary relation (or set of relations), without presupposing that these relations necessarily constitute an organism’ (Anderson et al. 2012b:177). Rather than the ‘organism’, Deleuze and Guattari rely on the notion of the ‘machine’ (Deleuze and Guattari 1987).

**Re-visiting the ‘machine’ and ‘organism’ metaphors**

Deleuze and Guattari, and those influenced by them, treat the ‘machine’ and ‘organism’ metaphors in strikingly different ways to those outlined in the previous chapter. For example, Colebrook’s (2002) discussion of Deleuze and Guattari’s use of the ‘machine’ and ‘organism’ metaphors sits in contrast to the description provided by Morgan (1990) in the field of organisational studies. As discussed in Chapter Two, Morgan (1990) argued that ‘organism’ is used to refer to a system of connected and dependent parts that constitutes a whole. Organisations are conceptualised as a living entity that constantly changes (Morgan 1990). Morgan argues that ‘machine’ metaphor, on the other hand, is used to conceptualise organisations as closed static structures (Morgan 1990).

Colebrook, in contrast to Morgan, argues that ‘[a]n organism is a bounded whole with an identity and end. A mechanism is a closed machine with a specific function. A machine,
however, is nothing more than its connections; it is not made by anything, is not for anything and has no closed identity’ (Colebrook 2002:56). Rather than using the concept of the ‘machine’ metaphorically, Deleuze and Guattari argue that ‘life is literally a machine’ (Colebrook 2002:56 italics appears in text). The ‘life as machine’ approach allows for a different approach to ethics, as Colebrooke argues:

We tend to begin our thinking from some presupposed whole: such as man, nature or an image of the universe as an interacting organism with a specific end. This allows our ethics to be reactive: we form our ethics on the basis of some pre-given unity. The machine by contrast allows for an active ethics, for we do not presuppose an intent, identity or end (Colebrook 2002:55).

Considering life as a ‘machine’ provides opportunities to focus on the material and the semiotic, and to approach ethics in a novel way. Yet, as Colebrook acknowledges, Deleuze and Guattari’s use of the ‘machine’ metaphor is unconventional (Colebrook 2002).

Additionally, DeLanda (2006), also influenced by Deleuze and Guattari, considers the ‘organism’ metaphor in a way that differs to the norm. DeLanda argues that the ‘organism’ mechanism suggests an ‘interiority of relations’ that does not allow for the existence of the parts (DeLanda 2006). The main alternative to the ‘organism’ metaphor, suggests DeLanda, is the ‘assemblage’ (DeLanda 2006). While I use Deleuze and Guattari’s assemblage thought to conceptualise and unpack protocols, I disagree with DeLanda’s sentiments that the ‘assemblage’ is the main alternative to the ‘organism’ metaphor. As I discuss below, the ‘ensemble’ metaphor is a better alternative to the ‘organism’ metaphor. The ‘assemblage’ metaphor is better placed as a supra-structure that assembles rational (machinic) and relational (ensemble) order. In creating ‘ensemble’ as an alternative metaphor for ‘organism’, and re-situating the ‘machine’ metaphor alongside it, I also disagree with Deleuze and Guattari that life is a machine.

Deleuze and Guattari’s ‘assemblage’ is a useful conceptual tool but, as I discuss in Chapter Nine, it has some theoretical, philosophical and ethical difficulties including the flattening (the removal of hierarchies and scales), and de-humanising (considering everything as machine) of social theory. However, despite the weakness of assemblage
A plan of inquiry

theory, I continue to use it because it is productive for mapping and exploring protocols. I continue in this thesis to use the term ‘machine’, but to overcome the conceptual inconsistencies, I maintain the terminology of ‘machine’ as a rational apparatus based on standardisation and calculability. I use the metaphor of an ‘ensemble’ to deal with the critique by Deleuzian thinkers who argue that the ‘organism’ metaphor reifies boundaries (Anderson et al. 2012b; Colebrook 2002).

Drawing from the musical definition of ‘ensemble’ I seek to conceptualise the relational aspects of groups of actors who ‘perform together’, or ‘play with appropriate balance and well co-ordinated articulations’ (Randal 2003:295). While I’d like to claim the metaphorical application of the ‘ensemble’ to organisations, others have used the metaphor to explore how people collaborate in organisations or organised activities (Boyd 2008; Heywood, Bilton, and Cummings 2014). I use the ‘ensemble’ metaphor in a similar way to Boyd who, for example, used the metaphor to explore the ‘instinctive rapport’ in music, as a ‘collaborative mini-culture, a mini ecology of collaboration’ popular culture, and a ‘group of people working in harmony over a considerable period of time’ (Boyd 2008:9.18-16.53).

To understand and unpack the ordering of protocols I use Deleuze and Guattari’s ‘assemblage’ concept to map the entities that constitute protocols. In doing so I treat protocols as assemblages (protocol-as-assemblage), and build upon observations made by Anderson (2010), Galloway (2004) and Carter (2010). Anderson, for instance, argues that ‘protocols can be understood as context-driven policy. [...] The structures that protocols take can vary depending on what they are needed for and who they are aimed at’ (Anderson 2010:28). Galloway and Thacker, in a similar manner, argue that ‘protocol facilitates relationships between interconnected, but autonomous entities’ (Galloway 2004:9). Carter, while not explicitly conceptualising protocol-as-assemblage nor the processes of de- and re-territorialisation, points out that changes occurs through engagement — between government departments and Aboriginal people — when protocols are not ‘upheld’ or ‘respected’ which results in protocols being seen as useless (Carter 2010). Carter’s observations suggest that protocols, when considered as an assemblage, are influenced by its parts.
Handling protocol-as-assemblage contributes methodologically to the treatment of protocol-as-recipe. As I discussed in the Chapter Two, protocol-as-recipe is a useful metaphor to describe the components and directions (step-by-step instructions) of protocols. In that discussion, the treatment of protocol-as-recipe implies that to make a recipe an actor needs to acquire the ingredients and cooking utensils prior to making the recipe (Goody 1977). This suggests that protocols inform practices through time and space both before enacting the protocol (before making the recipe), and in the actual process of enacting the protocol (making the recipe). The protocol-as-recipe treatment provides useful ground to explore the actions, outside of the step-by-step instructions, that are implicated in enacting a protocol. In this thesis, through the treatment of the protocol-as-assemblage, I build on some of the ideas from the protocol-as-recipe literature through exploring the ‘entities’ (or ingredients) of the IIPP, and how these ‘entities’ direct (provide step-by-step instructions) and assemble research practices and Indigenous knowledge. I use the term ‘entities’ to refer to the things that are assembled through the protocol. In this regard, ordering, as I see it, involves the dual co-existing processes of directing and assembling. Entities of the IIPP assemblage include, for example, ‘Indigenous intellectual property’ (as a category for defining knowledge), the Board of the DKCRC, DKCRC actors, and research ethics processes.

‘An assemblage approach demands an empirical focus on how these spatial forms and processes are themselves assembled, are held in place, and work in different ways to open up or close down possibilities’ (Anderson et al. 2012b:172). In this regard, this thesis takes an empirical approach to look closely at the entities that constitute assemblages and make up the relations (Allen 2011). I use a case study of the DKCRC IIPP and take particular focus on two aspects of the protocol that are of relevance, which hold it ‘in place’, and provides the territorial basis. In Chapter Five, I focus on the entities of contracts and ‘Indigenous intellectual property.’ In Chapter Six, I focus on the entities’ ‘procedural ethics’ and ethics-in-practice. Through Chapters Five, Six and Seven I explore how they these entities form the territorial aspects of the IIPP, and how enactment of these entities deterritorialise and reterritorialise the IIPP, which in-turn order research practices and Indigenous knowledge. The exploration I undertake to explore how protocol-as-assemblage orders Indigenous knowledge resonates with Turnbull’s observations that ‘an assemblage is made up of linked sites, peoples and activities; in a very important and profound sense, the creation of an assemblage is the
creation of a knowledge space’ (Turnbull 2000:19). Through Chapter Eight I explore how the IIPP became entangled in the branding and story telling of the DKCRC.

Why have I not specifically treated protocols as institutions?

While I refer in part to institutional theories of economics in the previous chapter (Coase 1937, 1960), to explore the conceptualisation of organisations and individuals, and my analysis of protocols makes similar arguments to institutional theory (that protocols order practices); I stop short of treating protocols-as-institutions. I am not against such a treatment; in fact I think protocols lend themselves to being theoretically handled as institutions, particularly in instances where institutions are defined as ‘forms of ongoing and relatively stable patterns of social practice based on mutual expectations that owe their existence to either purposeful constitution or unintentional emergence’ (Bathelt and Glückler 2013:346).

My chief concern, however, with treating protocol-as-institution is that protocol gets caught in the conceptualisation of institutions as informal and formal rules or practices. Institutional analysis conceptualises formal institutions as ‘overt or covert rules’ such as laws and regulations, and usually in the written form; while informal institutions are considered as norms and conventions (Bathelt and Glückler 2013:347). In a single setting, with limited interactions with Indigenous peoples, the formal and informal distinction might prove conceptually useful. However, in contexts where Indigenous peoples and their knowledge are involved, the informal and formal distinction is problematic. It is specifically so in situations where an organisational protocol, usually in written form, juts up against a pre-existing Indigenous protocol, usually in a non-written form. In these situations Indigenous protocols may be relegated to the realm of ‘informal’ rules. Everyday use of the term ‘informal’ can mean unofficial, unceremonious, or not a part of the formal mechanisms of governing or the economy. The conceptualisation of institutions as formal and informal creates a hierarchy where anything that is Indigenous may be assigned to a marginal position associated with the informal economy, or informal styles of governance. This fails to acknowledge that protocols can, and do, make up part of the ‘formal’ aspects of customary law. For some Indigenous peoples, while protocols for managing the ownership, stewardship or distribution of knowledge may not be written, breaking those protocols can have real tangible impacts. In places where both pre-existing Indigenous protocols and
bureaucratically developed protocols operate, how then do you label or conceptualise protocols without referring to Indigenous protocols as ‘informal’ institutions and bureaucratic protocols as ‘formal’ institutions? Due to the difficulties associated with the formal/informal division in institutional economics, I move away from referring to protocol-as-institution. Rather, I use the concept of assemblage because it allows for the breaking apart of a protocol and an examination of the parts to see how they each influence practices and knowledge. This is something that, I felt, assemblage thought provided for more easily than institutional thought.

**Practices: actors enacting protocols**

This thesis joins the growing body of knowledge, dedicated to exploring practices and the theorising of practices, occurring through organisations and economic activities (Corradi, Gherardi, and Verzelloni 2010; Eikeland and Nicolini 2011; Feldman and Orlikowski 2011; Jones 2013; Jones and Murphy 2010; Lauermann 2013; Orlikowski 2000). In their attempt to theorise practices, Feldman and Orlikowski (2011) situate the study of practices in three ways: empirically, theoretically and philosophically. An empirical analysis of practices focuses on how people act in organisations, specifically on ‘what’ practices are in a given context. A theoretical analysis seeks to understand the relationship between agency and structure, and focuses on ‘how’ practices are generated and operate through different contexts over time. Key theorists who have, as Feldman and Orlikowski argue, advanced the theoretical analysis of practices include Bourdieu (1977, 1990), Giddens (1976, 1979, 1984) and de Certeau (1984). Lastly, a philosophical analysis seeks to understand the role of practices in producing organisational reality, and focuses on ‘why’ practices generate a particular organisational reality.

Those who use an approach based on the theoretical analysis of practices ascribe to the following set of principles: ‘situated actions are consequential in the production of social life’, the rejection of dualisms for theorising, and ‘relations are mutually constitutive’ (Feldman and Orlikowski 2011:1241). The consequentiality of actions means that practices produce social order. The rejection of dualisms, in practice theory, tries to overcome the dualisms of, for instance, structure-agency and objective-subjective. Practice theory relies on the principle that no ‘phenomenon can be can taken to be independent of other phenomenon’ (Feldman and Orlikowski 2011:1242). Through
this, relations are not necessarily equal and power can and does operate through them (Feldman and Orlikowski 2011).

Weber may not be considered a ‘practice theorist’ but his chief concern in *Economy and Society* was with ‘social action’ (Weber 1968). Weber defined social action as when ‘human action is meaningfully related to the behaviour of other persons’ (Weber 1968:1375 emphasis in original text). While Weber recognised the existence of ‘irrational emotional action’, his chief concern was with social action as *gemeinschaftsstandeln* (rationally regulated action) (Weber 1968:1376). Weber argued that attempts to understand action are observational in two ways: ‘rational observational understanding of actions’ and ‘irrational emotional’ observational understanding of actions (Weber 1968:8). Additionally, he argued that understanding action can also be of an explanatory type that attempts to ‘understand in the terms of motive the meaning an actor attaches’ to a particular proposition ‘when he states it or writes it down, in that we understand what makes him do this at precisely this moment in these circumstances’ (Weber 1968:8). From this, Weber argues that empirical sociological investigations ought to begin with the question ‘what motives determine and lead the individual members and participants in socialistic community to behave in such a way that the community came into being in the first place and that it continues to exist?’ (Weber 1968:18). Understanding this point is particularly important for the analysis of protocol enactment.

This thesis follows both a relational perspective, that focuses on the analysis of practices at the micro-level (Bathelt and Glückler 2013), and a theoretical practice approach (Feldman and Orlikowski 2011). This thesis also uses Weber’s approach, in part, to look at what motivates actors through their practices (and actions). A ‘practice’ lens is used to understand how DKCRC actors enacted the IIPP and to explore the way that practices ‘stabilized, routinized, or improvised social actions’ (Jones and Murphy 2010:2). A critical aspect of practice theory is exploring the relationship between situated action and the context in which the action takes place (Feldman and Orlikowski 2011). In this regard, Chapter Three provides an overview of the existence of rational and relation order through the DKCRC, how actors become DKCRC actors, and how the DKCRC ordered its research practices and thus ordered knowledge.
The approach I take in this thesis, to explore the dynamic tensions between rational and relational order, could be considered as a contribution to the literature on the relationship between structure and agency (Bourdieu 1977; Giddens 1979, 1984). I use rational and relational order, rather than structure and agency, because they are more analytically useful to explore how protocols order, and how actors enact protocols. Using rational and relational order allowed an examination of the standardisation and calculative aspects of relations (or the exploration of structures in agency), as well as the examination of interactive and interpersonal aspects in rational order (or the exploration of agency in structures).

One of the difficulties and shortcomings of a practice approach is that ‘practices are not directly accessible, observable, measurable or definable; rather, they are hidden, tacit and often linguistically inexpressible in a propositional sense’ (Corradi, Gherardi, and Verzelloni 2010:267). Likewise, any attempt to explore the motivation of actors has to contend with the possibility that ‘the “conscious motives” may well, even to the actor himself, conceal the various “motives” and “repressions” which constitute the real driving force of his action’ (Weber 1968:9). Yet, despite these shortcomings, in Chapter Seven I take particular focus on the motives of actors, where I explore the different types of enactment of protocols as gatekeeping, guardianship and gatecrashing. Through Chapter Seven I explore how rational ordering is expressed through motivation based on ‘self-interest’ (in the form of the gatekeeper and the gatecrasher), and relational ordering is expressed through motivation based on altruism (or ‘other-interest’ — in the form of the guardian and the gatecrasher).

Entanglement: interaction of entities

At the beginning of this chapter I used Deleuze and Guattari’s analogy of the orchid and the wasp to highlight assemblage thought. I posited that if the wasp had taken a different flight path it might have become entangled in a spider’s web (and thus form a different kind of assemblage). I want to return here briefly to the notion of entanglement to define how it is conceptualised and used in this thesis and where it sits conceptually to the notion used by others. I do this to foreground the analysis in Chapter Eight where I explore how organisational protocols become entangled in other organisational mechanisms such as organisational branding and story-telling.
Entanglement is a term and concept used widely across geography, the organisational study of technology, philosophy and physics (see for example: Allen 2002, 2011, 2012; Barad 2007; Cresswell and Martin 2012; Edensor 2011; Humphreys 1997; Hüttemann 2005; McKelvey 2002; Orlikowski and Scott 2008; Vedral 2003). In physics, quantum entanglements refer to the ‘nonseparability’ of two particles (Barad 2007; Hüttemann 2005). As McKelvey argues, it is possible to consider entanglement as the ‘interdependence of two particles or entities such that neither one can behave or be understood independently’ of the other (McKelvey 2002:1).

Sociomaterial approaches, focused on technological uses in organisations, posit that ‘entangled relations between humans and technologies as performed, that is, not pre-given or fixed but enacted in practice’ (Orlikowski and Scott 2008:26). This approach views entanglement, not as the static intertwining of things, but as performance and practice. In geography, on the other hand, entanglement is used closely with assemblage thought. Allen, for example, argues that ‘one of the first things to understand about assemblages, or if not to understand then at least acknowledge, is what, for me, is their guiding sentiment. For much of the time, the geography of this or that is made up of relationships and things that jostle, co-exist, interfere and entangle one another’ (Allen 2011:154). Allen’s (2012) later discussion of entanglement employs the analogy of entities behaving like viruses to posits that if viruses can be formed differently, as they interact with differing genetic material in their hosts, then ‘entanglements’ are significant (Allen 2012). Through this, ‘entanglement’ is used as a notion to explore how different entities inter-act. Allen argues that ‘there is no line which marks the outside off from the inside, only entanglements of a topological kind’ (Allen 2012:192). This argument draws Allen to the conclusion that assemblage thought then, has very little use for the binaries of local/global, micro/macro, or internal/external.

Entanglement, as I see it in this thesis, is a conceptual tool used to change focus in an assemblage and a way of creating boundaries where none appear, at least in theory, to exist. It is a way of moving between entities in a scaled geography that operate at different scales, such as between the individual and the organisational, or the local and global. The notion of entanglement is also a conceptual tool used to deal with the flattening of geographies (Allen 2011; Dittmer 2014; Edensor 2011) that removes hierarchies of ‘social order’, which assemblage theory triggers. I use the concept of
entanglement to focus on aspects that existed in the case study that were not, strictly speaking, a formalised part of the IIPP, but which nevertheless influenced the IIPP. The entanglement of the IIPP is discussed in further detail in Chapter Eight where I explore how ‘The Desert Knowledge Story’ and the ‘desert knowledge’ brand entangled the IIPP through defining the ‘desert’ as distinctively different from the powerful coast, which had the effect of dis-placeing Indigenous peoples from ‘home’. Additionally, I explore how ‘The Desert Knowledge Story’ and ‘desert knowledge’ brand defined what constitutes ‘knowledge’ (or more precisely ‘desert knowledge’), which created a hierarchy of knowledge that subsumed Indigenous knowledge.

**Gaining access to Desert Knowledge Cooperative Research Centre**

As discussed in Chapter One, this thesis uses the case study of the IIPP developed by the DKCRC. My initial contact with the DKCRC was made through a DKCRC staff member who I met at an international conference overseas. After an initial discussion about the DKCRC and the IIPP I agreed to take on the analysis of the IIPP as a case study. I knew very little about the DKCRC, except what I’d garnered through conversations, when I agreed to undertake it as a case study. Access to DKCRC staff, researchers, Board members and buildings of the DKCRC were indicative of the various ways in which I was positioned within the organisational network. In some instance, my ‘insider’ status as a PhD researcher made it easy to access other researchers, but my ‘insideness’ was not enough to be allowed to freely access Board members or buildings. For instance, at the initial stages of the research, when the DKCRC was hosted by the Commonwealth Scientific and Industrial Organisation (CSIRO), I was required to have someone from the DKCRC office sign me in and out. I was, in this instant, very much an outsider to an organisation in which I had been asked to undertake research. Accessing the DKCRC Board proved difficult only to the extent that I was new to the area of organisation research and was ill equipped to make the necessary inquiries and requests to sit in on the Board meetings. Upon reflection a few well-worded emails may have been all that was needed for this to occur.

The case study included the use of participant observation, semi-structured interviews and a focus group. The case study was based on a three-phase design (please refer to Table 2).
Table 2 Case Study Design Phase

<table>
<thead>
<tr>
<th>Phases</th>
<th>Content</th>
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<tbody>
<tr>
<td>Phase 1: Scoping and ethics</td>
<td>1. Preliminary Discussions with DK-CRC</td>
</tr>
<tr>
<td></td>
<td>2. Obtain Ethical and Fieldwork Clearance</td>
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<td></td>
<td>3. Preliminary Discussions with:</td>
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<td></td>
<td>• Indigenous elders, experts in the field of protocol use,</td>
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<td></td>
<td>• DK-CRC</td>
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<td></td>
<td>• Board of management</td>
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<td></td>
<td>• Managers of core projects</td>
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<td>• Researchers</td>
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<td></td>
<td>• Extended network partners</td>
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<tr>
<td>Phase 2: Interviews and</td>
<td>4. Obtain Prior Informed Consent</td>
</tr>
<tr>
<td>Participant Observation</td>
<td>5. Gather information (interviewing and observation) on how policies</td>
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<td></td>
<td>and protocols are implemented from:</td>
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<tr>
<td></td>
<td>• DK-CRC</td>
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<td>• Board of management</td>
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<td>• Researchers</td>
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<td></td>
<td>• Extended network partners</td>
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</tbody>
</table>

Phase 1: Scoping and ethics clearance

Ethics clearance was taken out through Murdoch University’s Human Research Ethics Committee.

Phase 2: Interviews and participant observation

Participant selection

I attempted, unsuccessfully, to work closely with two communities who were in working relationships with the DKCRC. I had meetings with these communities but nothing eventuated. This was, in part, due to the fact that I did not have a driver’s license at the time, and getting out to the two communities, some distance out of Alice Springs, proved to be difficult. It was also, in part, due to the realisation that the communities I was hoping to work with, appeared to be over-burdened with DKCRC research. These concerns where confirmed by one DKCRC actor who said in an interview:

Paul (quote 1)
I think they [Desert Knowledge] have to be mindful of how many projects that they put into one or more communities. Because like I’ve said before is people are already overburdened, from social issues, to their working lives, their family lives, it is a big ask to have to deal with too many researchers who might come out with things that are not necessarily top priority.

I did not want to contribute to this over-burdening. On reflection, the research approach I took with the DKCRC would have provided more meaningful information from both DKCRC actors and Aboriginal community members if I had studied an existing DKCRC research project, rather than attempt to create an additional process for understanding the practical workings of the protocol. This seems clear enough now, but back then it didn’t.

Participants were selected for interviews based on their working relationship with DKCRC. This included DKCRC management staff, theme/core project leaders, PhD researchers, and participants in DKCRC research projects. Attempts were made to interview people in various locations, and to ensure a cross-section of people from universities, government departments and other organisations. Indigenous as well as non-Indigenous people were interviewed. However, given the low number of Indigenous peoples involved with DKCRC in management and as project leaders, these numbers were very low. Participants were selected from the DKCRC Board of Management; Managers of Core Projects; Project Leaders; researchers; extended network partners (centre and associate partners); and Indigenous community members (those already working with the DKCRC).

**Semi-structured interviews**

Interviews were conducted in various locations in Australia including Alice Springs, Perth, Canberra and Darwin. Interviews were semi-structured and ranged from informal chats to more formal recorded sessions, which were conducted both face-to-face and over the phone. Interviewees were informed that interviews would take between 20 and 40 minutes, however each interview lasted between 40 minutes to two hours. In advance of the interviews, the interviewees were sent an information sheet and Prior Informed Consent form. I spent time going through both documents with the interviewees who did not receive the documents beforehand.
Interviews were undertaken to gain specific understanding about the IIPP, how the DKCRC operated, and how individuals within the DKCRC positioned themselves. In light of these aims I asked questions concerning the nature of protocols including: what is your role in the DKCRC? have you heard about the IIPP?, what do you think a protocol is?, and what do you think the IIPP is about?

Semi-structured interviews were loosely based Lee’s (1999) notion of framing for conversational interviewing, which outlines a process to: explain to the interviewees the purpose of the interview (research study); provide an overview of the interview agenda (topics and themes), the expected nature of responses, extent of informality, and the probing nature of some follow-up questions; state that a debriefing will be provided at the end of the interviews; and gain informed consent for participants for the recording of field notes and tapes recordings of the interview.

Recorded interviews did not take place until participants gave their written prior informed consent (PIC) to be involved in this study. Part of the process of PIC was to: inform participants about the nature of this research; seek consent for interviews to be recorded; and inform the participants about the intended use of interview information. Through the process of PIC, participants were informed that they were able to withdraw their consent at any time during and/or after the interview. Approximately 25 recorded interviews were collected plus a number of informal conversations. Only one person declined to be recorded during the interviewing. Due to the nature of research ethics, and the requirements for anonymity of research participants, I’m unable to provide a list of the formal interviews and the positions of those who were interviewed. To do so would be to undermine the requirements of research ethics. To overcome this constraint, in the body of this thesis, pseudonyms have been given to the participants who were interviewed. A list of all quotes taken from participants can be found in Appendix 4.

Focus Group

I was also engaged in a focus group on the IIPP, which was a part of the DKCRC ‘project 3.117: Traditional Knowledge/ Intellectual Property Scoping Project’ (Smallacombe, Davis, and Quiggin 2007). Participants in the focus group included experts from around Australia. Most of the individuals were institutionally connected to
Chapter three

DKCRC; however, a number of individuals were not. Participants in the DKCRC ‘Scoping Project on Traditional Knowledge/Intellectual Property’ engaged in an in-depth discussion about the IIPP. For the purposes of this research, this group discussion was reframed as a focus group. The discussion took place over two hours and specific critique was generated regarding IIPP. Members of the focus group included both Aboriginal and non-Aboriginal people who were formally associated with the DKCRC, or who through the role of the convenor of this group, were brought in for their expert opinion. Participants in the focus groups resided in Alice Springs as well as locations in Western Australia, South Australia, ACT and other parts of the Northern Territory. The group was a mix of Indigenous and non-Indigenous people, and male and female. The focus group was held at the Charles Darwin library in Alice Springs. Prior to the specific discussion on the DKCRC IIPP the group had already undertaken work together through four previous meetings and were familiar with each other’s styles of working in groups.

My role in the focus groups, which I thought would be as a facilitator, was as a participant observer. I engaged in discussions, where I was able to provide input regarding the DKCRC, and interjected in discussions if they became stuck. My interjections took the form of a question relating to the IIPP. Use of material from this focus group comes mostly from the final report of the associated project, rather than my participation in the group.

Participant observation

As well as interviews, I also utilised participant observation. (Spradley 1980; Weiler 2001:30). I was a ‘participant as observer’ (Burgess 1984) in two student forums, one DKCRC conference, the Desert Knowledge Symposium, student researcher forum, meetings of one core project, office spaces of the DKCRC, one science fair and other informal settings. This was part of the broader approach to undertake an ethnographic study to ‘observe, interpret and report cultural phenomenon of some particular kind within their context’ (Singh and Dickson 2002:120).

Ethnography is the direct observation, interpretation and description of a particular phenomenon (Aunger 2004; Lee 1999) by a researcher. The phenomenon, in this instance, is the enactment of protocols. Most authors agree that the degree to which a
researcher is involved in the participation and observation of an event or phenomena varies between: complete participant, participant as observer, observer as participant, and complete observer (Singh and Dickson 2002). Others make a differing distinction referring to the researcher as the narrator, and adding to their taxonomy realist observation and postmodern ethnography (Singh and Dickson 2002). Despite these differences, there is consensus that the researcher’s values, beliefs, assumptions, and personal relationships influence data collection and the processes through which this is done. The ethnographic approach to research has strong roots in applied, cultural and social anthropology and sociology (Spradley 1980). However, the debate surrounding its validity and authority occurs in cultural anthropology (Nason 1998); advocates of this approach are surfacing in organisational and management research (Singh and Dickson 2002). In this thesis I position myself as the ‘participant as observer’ (Burgess 1984).

**Reviewing the DKCRC ‘documents’**

When I started research with the DKCRC, my first port of call for information on projects was the DKCRC webpage. In the time that I undertook research with DKCRC the webpage went through two major face-lifts, and at the cessation of the DKCRC the webpage was archived with much of the information moving to the newly formed Cooperative Research Centre for Remote Economic Participation (CRC-REP). At the beginning of the research, project information was stored in a table by project numbers. This table was located on the webpage under the click on button ‘Projects’. I took this information and entered it into an excel document to make the information more usable and meaningful to myself. This information was then used to set up a pivot table with information categorised according to the organisation of the researcher. This was done to make it easier to conduct interviewing.

Material relating specifically to DKCRC was accessed via its webpage. Any absent material was requested through senior management. Literature from DKCRC was reviewed from the themes under the previous structure, and core projects in the current structure. DKCRC Annual reports, research reports, documents, meeting minutes, brochures, banners, fliers, webpage, products — water bottles, shirts, hats, sunscreen, post it notes. When the DKCRC ceased operations, all of its documents were held on a ‘holding page’, through which most documents, until fairly recently could still be accessed. While the DKCRC itself may have ceased operations, Ninti One Ltd (its
corporate arm) still exists and is the basis for the newly formed CRC-REP (CRC-REP 2014). Many of the DKCRC reports can still be accessed via the CRC-REP webpage.

In Chapter Eight I undertake an analysis of The Desert Knowledge Story and the ‘desert knowledge’ brand that are contained in the DKCRC documents. I utilise Klein’s ‘Characteristics of Story’ to analysis the characteristics of The Desert Knowledge Story (Table 3).

**Table 3 Klein’s Characteristics of Story**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Explanation of the characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agents</td>
<td>The people who figure in the story</td>
</tr>
<tr>
<td>Predicaments</td>
<td>The problem the agents are trying to solve</td>
</tr>
<tr>
<td>Intentions</td>
<td>What the agents plan to do</td>
</tr>
<tr>
<td>Actions</td>
<td>What the agents do to achieve their intentions</td>
</tr>
<tr>
<td>Objects</td>
<td>The tools the agents will use</td>
</tr>
<tr>
<td>Causality</td>
<td>The effects (both intended and unintended) of carrying out action</td>
</tr>
<tr>
<td>Context</td>
<td>The many details surround the agents and actions</td>
</tr>
<tr>
<td>Surprises</td>
<td>The unexpected things that happen in the story</td>
</tr>
</tbody>
</table>

(Source: Klein 1999)

**Conclusion**

This chapter provided an overview of the plan of inquiry and tools used in this thesis. It provided an overview of how I conceptually understand and methodologically use the concepts of ordering, practices and knowledge. In this chapter I provided a discussion on assemblages, as a collection of entities, that derive from the work of Deleuze and Guattari (1987). Through this method, this thesis treats the IIPP as assemblages, which allows an interrogation of the entities that form part of its whole. I discussed practices as situated actions that produce social order, and entanglements as conceptual tools for drawing boundaries where, under assemblage thought, none would theoretically exist. I suggested that ‘assemblage’ operates as the supra-structure through which both the ‘machine’ and the ‘ensemble’ order. An ‘ensemble’, as I suggested provides a metaphorical tool to explore coordination and how actors perform together.

I explored the ways that ‘Indigenous knowledge’ has been defined and posited. I suggested that rather than contrast ‘Indigenous knowledge’ with ‘science’ or ‘Western
Knowledge,’ that ‘Indigenous knowledge’ is an assemblage of rational and relational knowledge. Protocols, I suggested, are one example of the assemblage of rational and relational knowledge. In this chapter I introduced the case study (the IIPP of the DKCRC), and outlined how I gained access to the DKCRC and the techniques used to gather information about the IIPP.

Throughout this thesis I illuminate how rational and relational order exist throughout organisations and protocols. It is not my intention to restate a divide between rational and relational order, rather to explore how these are produced (or even co-produced) through protocols. I do this through exploring the processes through which actors become ‘DKCRC actors’. That is, through signing contracts, to which the IIPP is attached, the IIPP is standardised throughout the DKCRC, and DKCRC actors are obligated to enact protocols as part of their research practices. Through this I question the influence of rational order on actors research practices behaviours (in the form of research practices). I explore how DKCRC actors confront the IIPP in situations where their own personal ethics sit uncomfortably with the ethics presented in the IIPP.

The next chapter turns to the context in which the IIPP existed and operated. Through Chapter Four I map the management and governance structures of the DKCRC, how actors became DKCRC actors, and the accounting and monitoring mechanisms that operated through the DKCRC. Through this mapping exercise I explore how the DKCRC operated as both a ‘machine’ of rational order, and an ‘ensemble’ of relational order.
Chapter Four. Desert Knowledge CRC. An ensemble and a machine

Introduction

Organisations are not just systems of standards, routine, discipline and control wrought over people. They are also places where people engage in flexible interactive, cooperative relationships. Through this chapter I argue that the DKCRC performed as both an ‘ensemble’ – a relational type that allows for the emergence of cooperation amongst actors, and a ‘machine’ – a bureaucratic rational-legal type that standardised processes, practices and knowledge to ensure that it operated efficiently and in response to State control. This configuration follows arguments made by DeLanda (2006), Sundarmuthy and Lewis (2003), and Ortega Lozano (2009) that organisations are a mixture of different forms of authority, and a dynamic tension between control and collaboration, and control and freedom.

This chapter outlines the authority structure of the DKCRC through which the State administered control, and which partners and stakeholders sought to cultivate cooperative research. I explore the mid-2005 restructuring of the DKCRC as both a machining of the organisation, and an expression that the DKCRC operated as an ‘ensemble’ seeking greater coordination. I outline the rational-legal and relational order present in becoming DKCRC actors through contracts; the material acts of a cup of tea; and accounting and monitoring mechanisms such as in-kind support, milestone reporting and registers. I suggest that contracting, monitoring and accounting, while rational aspects of the bureaucratic machine, provide foundations for the operation of the organisational ensemble. I explore the placement and ordering of DKCRC research and knowledge and suggest that this was rationalised through influences the State’s National Research Priorities.

The Desert Knowledge CRC management and governance

The DKCRC came to fruition through securing a bid from the CRC Program. The CRC Program is part of the national innovation system aimed at ‘supporting medium to long-term collaboration between producers and end-users of research’ (Commonwealth of Australia 2013:2). The DKCRC was a network of partner organisations that operated in
Australia from 1 July 2003 to 30 June 2010 (Desert Knowledge CRC 2010a). The
DKCRC Secretariat was located in Alice Springs with Centre Partners located
throughout Australia. As an unincorporated joint venture, the DKCRC established an
incorporated management company, Ninti One Ltd, which was ‘established by the DK-
CRCs partners to operate on their behalf and to act as a trustee for the intellectual
property arising from the Centre’s projects’ (Desert Knowledge CRC 2004:6).
Establishing a separate legal entity to handle intellectual property rights was a standard
approach throughout network of CRCs in Australia (Turpin, Garrett-Jones, and Wolley
2011). As I discuss in Chapter Five, Ninti One Ltd was also a key component of the
operationalisation of the IIPP through the DKCRC.

Table 4 DKCRC Mission objectives 2003-2010

<table>
<thead>
<tr>
<th>Mission</th>
</tr>
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<tbody>
<tr>
<td>The Desert Knowledge CRC will develop and disseminate an understanding of sustainable living in remote desert environments, deliver enduring regional economies and livelihoods based on desert knowledge, and create networks to market this knowledge in other desert lands.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>The objectives of the DK-CRC are to deliver the following outcomes:</td>
</tr>
<tr>
<td>• Sustainable livelihoods for desert people based on new natural resource and service enterprise opportunities that are environmentally and socially appropriate.</td>
</tr>
<tr>
<td>• Remote desert communities that are more viable to support the presence of desert people, as a result of facilitating access to more attractive services that are delivered more efficiently.</td>
</tr>
<tr>
<td>• Thriving desert economies that are based on unique desert knowledge and which are more self-sufficient.</td>
</tr>
<tr>
<td>• Increased social capital of desert people, their communities and service agencies.</td>
</tr>
</tbody>
</table>

(Source: Desert Knowledge CRC 2004:n.p)

The DKCRC’s vision for ‘thriving desert knowledge economies sustaining Australia’s inland environments’ was a response to an historical narrative of Australia that positioned the desert as the ‘outback’, and places that were ‘remote’ from the influences of State policy development. This narrative, as I discuss later in Chapter Eight, was instituted through ‘The Desert Knowledge Story,’ which provided the rational justification for the existence and operation of the DKCRC. Additionally, the notion of desert knowledge — the ‘unique knowledge we have about living well in the desert’ — was instituted through the ‘desert knowledge brand.’ As I discuss in Chapter Eight, this ‘desert knowledge brand’ rationalised knowledge through creating a hierarchy of knowledge that subsumed Indigenous knowledge within its order.
Chapter Four

The vision of the DKCRC was driven by a combination of factors including the CRC Program objectives, the eligibility requirements for CRCs and by the collection of people who met in the initial stages to develop the concept of a CRC for the desert. The objectives of the CRC Program in 2002 were to: ‘enhance the contribution of long-term scientific and technological research and innovation to Australia’s sustainable economic and social development’; ‘enhance the transfer of research outputs into commercial or other outcomes of economic, environmental or social benefit to Australia’; ‘enhance the value to Australia of graduate researchers’; and ‘enhance collaboration among researchers, between researchers and industry or other users, and to improve efficiency in the use of intellectual and other research resources’ (Bioaccent and Capital Hill Consulting 2002). While developing the concept of CRC for the desert, the collection of people had to ensure that the vision and objectives of the developing DKRC met both the CRC Program objectives and the collective vision of those gathered to develop the DKCRC. It was a process of being influenced by the rational order of the CRC Program and the relational order of the negotiations to develop the DKCRC.

To meet its own vision, the DKCRC aimed to contribute to the CRC Program through sustainable livelihoods for desert peoples, viable remote settlements, thriving desert regional economics, and increased social capital of desert people (Table 4) (Desert Knowledge CRC 2004:n.p). Over its seven year lifespan the DKCRC was supported through national funding from the Federal Governments Cooperative Research Centres Program (CRC Program), and in part through matched funding (cash and in-kind) from its partners (Desert Knowledge CRC 2010a).

**Management and governance: boards, bodies, and committees**

Like a bureaucratic machine, the DKCRC had parts that operated in a hierarchy that maintained the rational-legal order. State control over the DKCRC was extended through the CRC Program which prescribed the management and governance structure of CRCs through requiring the DKCRC to have a Chief Executive Officer (CEO) with overall responsibility, a Board of Directors which represents core participants and other stakeholders, and which must be ‘chaired by an independent industry representative’; and researchers who are responsible to the CRC and its management (OECD 2004:28).
The DKCRC also included a Partner Group, Stakeholder Advisory Group, and a Management Team through which the Board devolved day-to-day management of the DKCRC (Figure 1) (Desert Knowledge CRC 2004). Until mid-2005 the Management Team consisted of a CEO, Business Manager, Office Manager, Networking and Communications Officer, Networking and Communications Manager, Education Coordinator and Leaders of four research themes (Desert Knowledge CRC 2004). This structure allowed for the inclusion of expert knowledge, and created a bureaucratic ‘office hierarchy’ with each part ruled by one person (Weber 1968:957).

The Board: overseeing the ‘machine’/playing in an ‘ensemble’

The DKCRC Board performed as both a ‘machine’ — which sought to monitor and control, and as a ‘ensemble’ — that sought to ‘service and advise’ (Sundaramurthy and Lewis 2003:398). The composition of the Board changed over the life of the CRC, but at the commencement of the DKCRC, the Board consisted of a range of actors who satisfied sectoral and geographic interests, and was led by an independent Chair and Deputy Chair. While the appointment of an industry person to the Chair (a former Rio
Tinto senior executive) was regulated by the CRC program guidelines (OECD 2004), the appointment of an Indigenous person to the Deputy Chair (a Manager of Cultural and Natural Resources for the Uluru-Kata Tjuta National Park) was not. The appointment of an industry chair, as a standardised approach established in the CRC program guidelines, suggests that the DKCRC operated as a ‘machine,’ which was subject to rules emanating from the ‘legitimate order’ of the State.

The DKCRC mission — ‘develop and disseminate an understanding of sustainable living remote desert environments’, deliver desert knowledge based livelihoods, and the creation of networks to market this knowledge (Table 4) — rationally and relationally justified the inclusion of Indigenous people and knowledge in the DKCRC, and on the Board. In the desert regions of Australia, Indigenous peoples make up one-fifth of the population, and have a long on-going connection to ‘country’ that affords them expert environmental knowledge (Desert Knowledge CRC 2004). The inclusion of Indigenous people on organisational Boards is considered a necessary aspect of protocol enactment and implementation (Nakata and Langton 2005). This was certainly recognised by the DKCRC that sought to ensure Indigenous people were included on the Board. The appointment of an Indigenous person to the Deputy Chair suggests that DKCRC performed as an ‘ensemble’, which sought to create harmonious cooperative relationships. The appointment of an industry Chair and an Indigenous Deputy Chair lay the foundations for a cooperative approach to research that provided balance to the competing interests of Indigenous and scientific and knowledge (Desert Knowledge CRC 2004).

The selection of Board members was controlled, in part, by the State which required that ‘research providers not hold a majority of Board positions’ (Commonwealth of Australia 2008:59). This directive influenced the appointment process of general Board members. To ensure that the DKCRC was able to create a cooperative centre, or an ensemble, built on expert knowledge from a variety of areas; the six Board members were elected by the Centre Partners and had expertise on commercialisation, public investment, desert issues, Indigenous knowledge, education and training, and research and development (Commonwealth of Australia 2008).
The Board’s machinic qualities were also manifested when it initiated the 2004 evaluation of the DKCRC (Desert Knowledge CRC 2004), which was required by the CRC Program (Zhao n.d). Through its position at the top of a hierarchical order, the Board instigated the evaluation to examine ways to maximise the DKCRC’s ‘research capacity and management capacity and to further improve collaboration between research fields’ (Desert Knowledge CRC 2005:40). As I discuss later in this chapter, the evaluation sought to service and oil the bureaucratic machinery, and enhance the performance of the ensemble, which justified the re-structuring of the management and research structures of the DKCRC.

The Board played a particular role in the management and future developments of the IIPP. The Board became part of the IIPP assemblage through a number of clauses (including clauses 2, 3, 4(e), 6, 7, and 8) (Appendix 1). Through these clauses the Board acted as an ‘obligatory passage point’ (Callon 1986) for decisions on the publication, commercialisation, or exploitation of Indigenous intellectual property. The Board, through clause 4(e), acted as an administrative controller that was able to request that a researcher destroy copies/descriptions of Indigenous knowledge (or information) collected through their research practices. And, as I discuss later in Chapter Five, clause seven of the IIPP established a mechanism to distribute benefits. The form of distributive justice embedded in this clause was administered through Indigenous members of the Board establishing a group of Indigenous Trustees to manage the funds. I explore the role of the Board, as it relates specifically to the IIPP in more detail in Chapter Six.

Risk and Intellectual property committees of the Board: creating certainty

Two standing committees, connected to the Board, were established to assist the Board with overseeing ‘audit and risk management’, and ‘intellectual property and ethics’ (IP and ethics committee) (Desert Knowledge CRC 2004). While the ‘audit and risk management committee’ played a rationalising role in the DKCRC, its involvement in the management and development of the IIPP was minimal. Therefore, I leave aside a discussion of this committee, and focus instead on the ‘IP and ethics committee’.

The IP and ethics committee was established by the DKCRC at the inception because the Centre Agreement (the agreement with the Australian Government) had to establish
the rules governing IPRs (OECD 2004). The State, as the legitimating authority, ‘placed an absolute focus on commercialisation/utilisation of outcomes’ and regulated this by a request for ‘more stringent requirements to demonstrate their IP management and commercialisation ‘vehicles’, with clear milestones and ‘paths to adoption’ (Commonwealth of Australia 2008:xii). Establishing an IP and ethics committee machined the DKCRC’s response to the development of IPRs and research ethics. As I discuss later in Chapter Six, this committee allowed the Board to maintain oversight and control of research ethics and the commercialisation of knowledge (including Indigenous knowledge). From this vantage point the Board could perceive any blockages that could impact on the efficiency of the ‘machine’.

Due to stakeholder concerns about the ownership and control of Indigenous knowledge, the IIPP (Appendix 1) was developed prior to the inception of the DKCRC and included in the DKCRC Centre Agreement to ensure that it met with the Australian government’s requirement for handling intellectual property rights (Desert Knowledge CRC 2003). Including the IIPP in the Centre Agreement meant that the IIPP was heavily embedded within the rational order of the DKCRC bureaucratic machine and, as I discuss later in this chapter, every partner to the DKCRC was therefore mandated to adopt the IIPP. Mandating DKCRC actors to adopt and enact the IIPP distributed control and management of ‘Indigenous intellectual property’ into autonomous partners of the DKCRC.

The IIPP included a clause on commercial benefits (clause 7), which ‘recognised that the evaluation of Indigenous IP is difficult in cross-cultural contexts and there is a significant risk that the value of Indigenous IP will be miscalculated’ (Desert Knowledge CRC 2003:2). To handle this risk the IIPP regulated that an amount of the commercialisation revenue would be allocated into a separate account, and used to fund research for the Indigenous community. The separate account was held and administered by Ninti One Ltd with advice from the Indigenous Trustees of the DKCRC Board. This arrangement, as I discuss in Chapter Five, was an attempt at distributive justice — to distribute benefits arising from DKCRC research to Indigenous communities in the desert. The configuration of the distribution of commercial benefits through the IIPP was heavily influenced by the way in which the DKCRC was legally constituted. As the OECD study on Australian CRCs indicated
‘IPRs developed in the course of the research by the CRC belongs to the CRC and in the case of CRCs which are not legal entities in their own right (i.e. unincorporated joint ventures) the IPRs are held by one of the public sector partners on behalf of the CRC participants’ (OECD 2004:30).

The IIPP clause on distributive justice was embedded within the rational order of the DKCRC. Yet, the very idea that benefits of DKCRC research ought to be distributed amongst Indigenous communities shows that an ethics of responsibility or obligation to others existed in the DKCRC, and in order for this to operate the DKCRC operated less like a ‘machine’ and more like an ‘ensemble’ — with actors considering their relationship to others in their research practices, rather than just passing through a mechanical research process. While the DKCRC operated through a Centre Agreement with the Commonwealth and was overseen by a Board, the people who established the DKCRC also chose to include the IIPP with a clause resembling something akin to distributive justice. Very few, if any, other CRCs have something like this. If the DKCRC operated purely as a ‘machine’ then it would have had very similar standardised approaches to Indigenous research and Indigenous knowledge as other CRCs. It did not, however, and because of this, the very existence of the IIPP, and in particular the clause on distributing benefits, suggests that the DKCRC operated as an ‘ensemble’ where DKCRC actors (including the Board) had to consider their use of Indigenous Intellectual Property and their interactions with Indigenous people/s.

Assembling expert knowledge and strategic advice: advisory bodies

The development of bureaucratic machines includes the emergence of ‘advisory bodies’ as part of the management structure of the organisation (Weber 1968:996). As discussed in Chapter Two, advisory bodies in bureaucracies are made up of individuals recruited from economically and social influential strata. The DKCRC used ‘advisory bodies’—through the form of the Participants’ Forum and the Desert Advisory Forum (Figure 1) to harness and include strategic advice and expert knowledge from DKCRC Centre Agreement partners and stakeholders.

The Participants’ Forum, made up only of Centre Agreement signatories, had a powerful role in the DKCRC Management structure because it selected DKCRC Boards members and had a ‘formal link to the Board through the ex-officio non-voting
membership of the deputy chair’ (Desert Knowledge CRC 2004). The Desert Advisory Forum, on the other hand, was a body in the DKCRC management whose members were ‘chosen to complement Board members’ own experiences’ and to offer strategic advice to the Board (Desert Knowledge CRC 2004:6). The members were chosen from the five stakeholder groups: small business, local government, Indigenous interests, State and national agencies, and major corporations (Desert Knowledge CRC 2004). Both advisory bodies functioned to provide expert knowledge to drive the bureaucratic machine, and to enable the ensemble to operate cooperatively. Assembling a wide variety of interests enabled the DKCRC to manage any potential conflicts in a standardised calculable approach, but in a way that would enable flexible cooperative engagement of the interested parties.

**Restructuring: emergent rational and relational order**

Organisations often restructure to create greater efficiencies, which is assumed will improve productivity, reduce costs and increase competitive advantage (Lee and Teo 2005). In 2005, during the course of my research, the DKCRC went through a re-structure and a change of leadership. The restructure was done so that the DKCRC could maximise its ‘research and management capacity and to further improve collaboration between research fields’ (Desert Knowledge CRC 2005:40). Instigated by the Board, the restructure included a change to the structure of research from four themes into six core projects, which was rationalised on the basis that it would more easily meet the DKCRC objectives (Desert Knowledge CRC 2005). The structuring and restructuring of knowledge in the DKCRC — through the themes and core projects — is discussed later in this chapter. The rest of this section focuses on changes to the DKCRC management and governance structure.
Prior to 2005, the DKCRC structure was based on the office positions of the ‘business manager’, ‘theme leaders’, ‘education coordinator’, and ‘communications staff’ — all pictorially represented in the same tier of management (Figure 1). The post-2005 structure divided the role of the CEO into the positions of Managing Director and General Manager (Desert Knowledge CRC 2005). Splitting the CEO position was done as part of the strategic review and in recognition that the DKCRC would be unlikely to find a person who could fulfil both the requirements for expert knowledge and management skills. As one DKCRC actor said:

Anna (quote 2)

[Person A] is not a researcher, and that's why [person B] is in the general manager role, because when they recruited for a managing director, they knew it would be very unlikely to get someone with the management skills and the research strengths in the same person. As part of that whole strategic review, the management team review said, you know alright we'll recruit for a managing director on management excellence without having to also expect them to have research excellence and then the general manager role would be the research quality and process manager.
The creation of Managing Director position away from a CEO position was done to enable the DKCRC machine to continue to function. The Managing Director position — saw the leadership of the DKCRC change from a ‘scientist’ to a ‘bureaucrat’, which was indicative of broader influences of managerialism in higher education and R&D organisations. It shows a desire for someone to oversee the operations of the DKCRC as a machine — to ensure that it is managed efficiently and that standards are being met.

Whether a ‘manager’ is a scholar or not, and whether this impacts on the research quality of the organisation was questioned by Goodall, who argues that research universities should be led by top scholars (Goodall 2009). According to Goodall (2009) scholars are more likely to be perceived as legitimate leaders through their academic record, and be accepted and positioned as more credible leaders. ‘Being a top scholar provides a leader with deep understanding and expert knowledge about the core business of the university’ (Goodall 2009:8). The academic leader sets the standards for the organisation for others to follow, and sends a signal to others in the organisation that they ‘share the same scholarly values and that research success in the institution is important’ (Goodall 2009:8).

While it was possible that this change in management within the DKCRC from a ‘scientist’ to a ‘bureaucrat’ had influences on the staff, researchers and partners, I was unable to follow-up on this line of thought within the case study. At that stage of the research, it was certainly unclear to me whether this was likely to have any impact on the enactment of the IIPP. It is an area that is interesting, and certainly worthy of further investigation. Including the General Manager position, however, was done to ensure that expertise in research was maintained within the DKCRC management structure, and which enabled the DKCRC cooperative ensemble to continue to operate in an environment of possible competing research interests.

The restructure was also an attempt to institute relational order and make it easier for a newly established position in the management structure to collaborate across projects. As the 2005-2006 DKCRC Annual Report stated:

*The new program structure also encourages increased cross-over between projects. This year we benefited from the input of the Social Science Coordinator, a role recognised as being necessary*
within the first year of the Desert Knowledge CRCs existence, and realised in early 2006. One of the coordinator’s roles is to embed the principles of social science research across the Desert Knowledge CRC. The long-term goal is to create a research philosophy that is socially inclusive, one that acknowledge collaboration and engagement as importantly as the ‘hard’ outputs of research (Desert Knowledge CRC, 2006:16)

The new DKCRC structure added two ‘Program Managers’ and a ‘Social Science Coordinator’ to oversee the management of the re-configured research areas falling into the five core projects. These positions were made part of a newly established ‘executive management’ (Figure 2 and Figure 3). The new structure was more inwardly directed with accountability pointing towards the Managing Director. The introduction of a designated person for coordinating social science research was an attempt to use the rational ordering, through an expert, to stimulate and create cooperative research relationships. As the Annual Report suggests, the creation of cooperative research relationships is just as much an ‘output’ of research as material products or IP.

Figure 3 DKCRC Management and Governance Adjustments (2006)

(Source: Desert Knowledge CRC 2007:10)
While the DKCRC did not go through another re-structure throughout its remaining lifespan, it did make some minor adjustments in its structures in 2006-2007 including the introduction of a ‘Rebid Coordinator’, and a ‘General Manager Commercialisation’ (Figure 3). The establishment of a manager to oversee commercialisation is indicative of State rationality that required commercialisable outputs (in the form of IP) of CRCs.

**Becoming a DKCRC Actor**

To qualify to become an actor in the CRC, actors must fit into the standardised categories of ‘producer’ or ‘end-users.’ The category of end-users is defined by the CRC as ‘either a public or private entity capable of deploying research outputs to deliver significant economic, environmental and/or social benefits to Australia’ (Commonwealth of Australia 2013:2). The DKCRC was based on a set of standardised categories of actors that allowed for the creation of the network through which the DKCRC could meet its auditing and reporting obligations with the State. The standardisation categories of actors created the necessary foundations through which contracts (or legal agreements) could be easily employed to create the necessary legal structures for the DKCRC. Once actors are assigned to a standard category it becomes easy to fit them within the ‘machine’. Yet building a network of actors to form a CRC requires more than just fitting actors into a standard category. It also entails enabling relational order to occur through ongoing conversations and building relationships with actors, to shepherd the relationship to the point that actors wish to join the CRC, but also to ensure that they stay. This section details some of the ways that DKCRC resembled a ‘machine’ and an ‘ensemble’ through exploring how actors were constituted through the DKCRC.

**‘Machined’ and ‘ensemble’ partners: through standards, cooperation and contracts**

At the inception of the DKCRC the standard categories of actors were: Centre Partners, Core Partners, and Associate Partners. At the commencement of the DKCRC there were eight Core Partners, seven Centre Partners, and 12 Associate Partners. As the DKCRC matured, the DKCRC established a new standard category (Affiliate Partners) in 2005-06 (Desert Knowledge CRC 2006) that allowed for partnerships with Indigenous organisations. This occurred after the realisation that the DKCRC required the skills, knowledge and expertise of Indigenous organisations, which were unable to join the DKCRC under the pre-existing standard categories. The number and type of
partners fluctuated over the life of the DKCRC (Appendix 2). By the time the DKCRC ceased operations, their Core Partners remained the same eight, while the number of Centre Partners had decreased to five; there were nine Associate Partners, and there were six Affiliate Partners (Table 5). Over the life of the DKCRC there was a contraction in the number of Centre and Associate Partners, and an increase in the number of Affiliate Partners.

The development and establishment of the Affiliate Partner category allowed for the DKCRC ‘machine’ to engage with Indigenous organisations in the manner of an ‘ensemble’.

Several years ago, a diverse group of people — from the private and public sectors, the Aboriginal and non-Aboriginal communities — came together in Alice Springs to address these issues. The Aboriginal community’s vision was of a Desert Peoples Centre, a place of Indigenous teaching and knowledge-sharing. Others brought research, technology and business skills to a similar vision for a place of learning for all desert peoples together. Following years of intense discussions and lobbying, these shared visions are becoming reality (Desert Knowledge CRC 2004:5).

The above quote is from ‘The Desert Knowledge Story’ – a story that was published each year in the DKCRC Annual Reports. It was a device used to create and stabilise relational order in the DKCRC. As a story telling device, ‘The Desert Knowledge Story’ sought to ‘express something irreducibly particular and personal’ and to ‘affect, and produce collectivities’ of DKCRC actors (Cameron 2012:574). As ‘The Desert Knowledge Story’ suggests, to get the DKCRC bid off the ground and funded, cooperation was required amongst the vast range of actors. Relationship building and cooperation was done on the basis of trust to gain a competitive advantage over other consortiums hoping to secure funding through the CRC grants scheme.

The DKCRC, while operating on cooperation and trust, also relied on a system of legal agreements. The use of standard categories of actors, as outlined above, allowed for the operation of these legal agreements. CRCs are established through a Commonwealth Agreement — ‘an agreement between the CRC company or the agent and the Australian Government’ (Commonwealth of Australia 2013:14), also referred to as the
Centre Agreement; and the Participants Agreement — ‘an agreement between the participants and the CRC company or agent’ (Commonwealth of Australia 2013:14), which is also more generally referred to as the ‘Core Agreement’ (Zhao n.d:2).

Table 5 Desert Knowledge CRC Partners at End of the CRC (in 2010)

<table>
<thead>
<tr>
<th>Type of Partner</th>
<th>Name of the Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Partners</td>
<td>Central Land Council</td>
</tr>
<tr>
<td></td>
<td>Charles Darwin University</td>
</tr>
<tr>
<td></td>
<td>Commonwealth Scientific Industrial Research Organisation (CSIRO)</td>
</tr>
<tr>
<td></td>
<td>Curtin University of Technology</td>
</tr>
<tr>
<td></td>
<td>Desert Peoples Centre (Centre for Appropriate Technology and Bachelor Institute of Indigenous Tertiary Education)</td>
</tr>
<tr>
<td></td>
<td>Government of Western Australia</td>
</tr>
<tr>
<td></td>
<td>Northern Territory Government</td>
</tr>
<tr>
<td></td>
<td>Office of Indigenous Policy Coordination</td>
</tr>
<tr>
<td>Centre Partners</td>
<td>Griffith University</td>
</tr>
<tr>
<td></td>
<td>James Cook University</td>
</tr>
<tr>
<td></td>
<td>Murdoch University</td>
</tr>
<tr>
<td></td>
<td>Newmont Australia</td>
</tr>
<tr>
<td></td>
<td>The University of South Australia</td>
</tr>
<tr>
<td>Associate Partners</td>
<td>Flinders University (Centre for Remote Health)</td>
</tr>
<tr>
<td></td>
<td>New South Wales Department of Primary Industries</td>
</tr>
<tr>
<td></td>
<td>South Australian Department of Water, Land and Biodiversity Conservation</td>
</tr>
<tr>
<td></td>
<td>Southern Cross University</td>
</tr>
<tr>
<td></td>
<td>The Australian National University</td>
</tr>
<tr>
<td></td>
<td>The University of Adelaide</td>
</tr>
<tr>
<td></td>
<td>The University of Queensland</td>
</tr>
<tr>
<td></td>
<td>The University of Western Australia</td>
</tr>
<tr>
<td></td>
<td>University of Wollongong</td>
</tr>
<tr>
<td>Affiliate Partners</td>
<td>Australian Institute of Aboriginal and Torres Strait Islander Studies</td>
</tr>
<tr>
<td></td>
<td>Indigenous Australian Foods Ltd</td>
</tr>
<tr>
<td></td>
<td>Robins Foods</td>
</tr>
<tr>
<td></td>
<td>Tangentyere Council</td>
</tr>
<tr>
<td></td>
<td>Tapatjatjaka Community Government Council</td>
</tr>
<tr>
<td></td>
<td>Waltja Tjutangku Palyapayi Aboriginal Corporation</td>
</tr>
</tbody>
</table>

(Source: Desert Knowledge CRC 2010a)

State control and rational order were administered through the ‘Commonwealth Agreement’ that established, for example, the parameters for management and governance, requirements for participants, what Commonwealth funding can be used for, monitoring progress, and amongst other things, IPRs (Commonwealth of Australia 2011). Additionally, to become a formal partner to a CRC, actors have to enter into ‘Partnership Agreements.’ The legal rational use of agreements made the entity a bureaucratic machine with each actor playing a particular part in the structure of the DKCRC, including legal obligations on when and how they should report against their
milestones. In this regard, the relationships resembled agency relationships that were created through contractarian ethics. This approach, as I discussed in Chapter Two, is based on morality that consists of rules that have been negotiated and consented, which implies that there is a ‘calculability of action’ (Bauman 1993:59-60) and that actors joined the DKCRC based on ‘rational egoism’ — ‘the view that one has good reason to do something only if doing it will serve one’s self-interest’ (Shafer-Landau 2013:556).

However, using machinic tools, such as contracts also provided the legal basis for the DKCRC to operate as an ‘ensemble’ of actors. A tension between competition and cooperation exists in CRCs (Garrett-Jones, Turpin, and Diment 2010); this is a tension that is negotiated around individual self-interest and interest for the operations of the collective. The use of contracts to establish the DKCRC provided the foundation for this dynamic tension, which as I discuss in Chapters Four, Five and Six, played out through the IIPP, which was constituted through the same contracts.

**Accounting and monitoring: In-kind support, milestones and registers**

Keeping a machine ticking and on schedule requires ongoing monitoring to ensure that each part is operating effectively, not just by itself, but that it keeps time with the rest of the parts. Monitoring the CRC organisational machine is done using the accounting and auditing tools of ‘in-kind’ support, milestone reporting and registers. Ongoing monitoring enables oversight and control of the parts. This section provides an overview of how in-kind support, milestone reporting and registers were used in the DKCRC as part of the rational order, and how these both provide for the operationalisation of relational order.

**In-kind and in-love support: machining non-cash promises and creating the ensemble**

‘All participants in a CRC must contribute resources to the CRC’ in the form of cash or in-kind contributions, which are ‘treated equally’ in the accounting methods of the CRC (Commonwealth of Australia 2013:7). In-kind contributions are non-cash contributions such as wages and infrastructure (Commonwealth of Australia 2013). Because ‘universities and publicly funded research agencies, such as the CSIRO, are not required to contribute cash resources’ to CRCs (Commonwealth of Australia 2013:7); in-kind contributions are a major accounting method for monitoring the flow of contributions.
in the form of personnel, time and infrastructure. As Weber argued, ‘the more difficult problems of calculation begin when it becomes a question of comparing different kinds of means of production […]. Every capitalistic enterprise is, to be sure, continually concerned with calculations in kind’ (Weber 1968:101). In-kind accounting allows for the standardisation of people into discrete specialised units with assigned roles and responsibility to which a monetary value can be assigned. Or as Weber argued, ‘in order to make possible a rational utilization of the means of production, a system of in-kind accounting would have to determine the “value”-indicators of some kind of the individual capital goods which could take over the role of the “prices” (Weber 1968:101). In-kind accounting is a rational technique (Weber 1968) that appears to provide a method for the bureaucratic “machine” to track the monetary value of cooperative endeavours.

In-kind support also acts as a cooperative accounting mechanism because it is designed to track, amongst other things, the time contributions and commitments of individual actors to particular research projects. Importantly, the act itself of tracking time allows the machine to operate while machining individuals – turning individuals into parts of the machine. As Michelle, a DKCRC actor, recounted:

Michelle (quote 3)

I have a time-tracker. So I have a time-tracking device with all my projects. When I stop and finish I record those things […]. I have a funds-tracker. I have expenses and in-kind hours and so I track accumulative in-kind hours so over time I track for each of the people and how their in-kind is going […]. You have to keep track of everything so that you know where you are heading and your time and things like that. It is very easy, it is just an excel spreadsheet and it is coming out of the Desert Knowledge CRC. Like I’m doing some quarterly reporting It is taking this and putting in your actual hours and then they give you all this information and from that I can fill in information to see where I’m heading. So I know my projects.

The act of tracking time commitments for projects becomes an automated part of the management of a project. The DKCRC researcher becomes the machine, or in other words, they enact the rational order required for the machine to operate.

In-kind contributions were a substantial amount of the overall operational budget of the DKCRC that ensured its economic survival. For the life of the DKCRC (between 2003 and 2010) in-kind contributions made up between 36.5 and 65.4 per cent of the total
resources revenue (Appendix 9). Because in-kind was such a substantial contribution, and because research relationships were dependent on it, slippage occurred in the DKCRC between how much was promised and how much was given. This slippage is well reported by others who note that in-kind accounting creates tensions in cooperative research relationships (Commonwealth of Australia 2008:67; Garrett-Jones et al. 2005; Garrett-Jones, Turpin, and Diment 2010; Turpin and Garrett-Jones 2010).

The tension associated with in-kind support was highlighted throughout my interactions with one of the DKCRC actors who jokingly referred to ‘in-kind’ support as ‘in-love’ support. This appears to be a light hearted attempt to both critique the amount of work that each participant contributed to the DKCRC, and to indicate that there was, to a certain extent, some form of complicity in making contributions that go beyond the initial contribution indicated in the form of a legal agreement. It hints that while being a part of the DKCRC brings benefits, there are also elements that are highly burdensome.

In-kind contributions were required in order for the DKCRC to secure funding through the CRC Program. Yet, the notion of ‘in-love’ support clearly indicates that other aspects of relational order were at play in the DKCRCs. Garrett-Jones et al, for instance, argued that CRCs are a ‘fragile coalition of interests’ (Garrett-Jones, Turpin, and Diment 2010:537). And ‘the “glue” that holds this collaboration together is firstly mutual trust between the participants, and, second, a range of formally agreed activities and rules’ (Garrett-Jones, Turpin, and Diment 2010:537). In-kind support is built into the CRC agreements with partners to indicate what contributions each partner will make. It is part of the rational order. Yet, in-kind support forms the basis upon which relationships are judged. If one partner has committed a certain amount of in-kind support to a project, but fails to fulfil that commitment then it places strain on that relationship, and destabilises the trust in the partnership (Garrett-Jones, Turpin, and Diment 2010).

Garrett-Jones et al, argue that the level of commitment in a project is dictated by commitments to their employer – the ‘mother’ institution (Garrett-Jones, Turpin, and Diment 2010).

**Milestones and registers: monitoring the ‘machine’, enabling the ‘ensemble’**

Monitoring is defined as the deeds ‘conducted by one party to gain information about another party’s level of cooperation. Monitoring is considered a critical element of
formal control’ (Costa and Bijlsma-Frankema 2007:470). Monitoring can both undermine cooperation and build it (Costa and Bijlsma-Frankema 2007). Monitoring, in the form of milestone reporting and registers, played the dual role of control and cooperation in the DKCRC. In a similar way to in-kind contributions, milestones act in part as a form of monitoring or a tracking method. But rather than tracking progress in terms of quantity of time, as in-kind accounting does in CRCs, milestones create the basis for monitoring progress towards meeting outcomes spelled out in the organisational aims, missions and objectives. In research organisations a system for monitoring progress requires the rationalisation of knowledge to function. In order to track the progress of a project, knowledge needs to be divided into smaller units of data so that the ‘machine’ can handle it. Reporting progress against target areas is easier and more efficient than reporting for large multi-aimed projects. In universities, this rationalisation includes the creation of disciplines, schools and faculties. In the DKCRC this rationalisation, as I discuss in the last part of this chapter, was based on themes and then core projects (Table 7 and Table 8).

Milestones at the DKCRC were set through the themes and core project system, matched to the DKCRC objectives. For example, the research area ‘Desert Enterprise’, which included five core projects, was matched to the first DKCRC objective and included outputs with designated milestones (Table 6).

To keep the machine ticking and running on time, milestones were reported yearly in the Annual Report, and was supplemented with additional reporting timetables as agreed by the partners for each of the projects. Project managers, the core project leaders, the broader management team and secretariat, as part of their designated roles, prepared the milestone reporting for the State, and to communicate amongst its partners how the ‘machine’ was operating against its proposed outcomes and outputs.

Table 6 Example of milestones from DKCRC Program 1 - Desert Enterprises
Outcome 1 (DKCRC Objective 1): Sustainable livelihoods for desert people based on natural resource and service enterprise opportunities that are environmentally and socially appropriate

**Output 1.1: Develop a framework that values desert people as service providers of natural and cultural resources.**

- **Milestone 1.1.1** Understand the opportunities for the supply of and demand for ecosystem and cultural resources.
- **Milestone 1.1.2** Develop tools that value ecosystem and cultural assets.
- **Milestone 1.1.3** Create business case(s) for identified livelihood opportunities.

**Output 1.2: Generate knowledge and increase capacity for demand-driven bush products industries, expand and deliver benefits to Aboriginal desert people.**

- **Milestone 1.2.1** Understand the supply chain for bush foods.
- **Milestone 1.2.2** Develop strategies for supply chain growth while maintaining product quality and integrity.
- **Milestone 1.2.3** Create business case(s) for identified livelihood opportunities.

**Output 1.3: Understand the impacts created by tourism in desert Australia.**

- **Milestone 1.3.1** Identify enterprise opportunities and flow patterns of tourists in desert Australia. By June 2007.
- **Milestone 1.3.2** Evaluate the social, cultural and environmental consequences of 4WD tourism. By June 2008.
- **Milestone 1.3.3** Create business case(s) for identified livelihood opportunities. By June 2009.

**Output 1.4: Gather information and create products that deliver improved triple-bottom-line performance for the pastoral industry.**

- **Milestone 1.4.1** Understand the social, economic and productivity factors that will drive pastoralism in the 21st century. By June 2007.
- **Milestone 1.4.2** Develop tools and processes that will improve pastoral enterprise performance. By June 2008.
- **Milestone 1.4.3** Create business case(s) for identified livelihood opportunities. By June 2009.

**Output 1.5: Increase knowledge to support desert business activity.**

- **Milestone 1.5.1** Deliver data on business activity to desert Australia. By June 2008.
- **Milestone 1.5.2** Create business models that are more appropriate and suited to desert Australia. By June 2009.

(Source: Desert Knowledge CRC 2007:28-30)

In 2004/05 the DKCRC introduced a ‘Project Tracking System’, which allowed project leaders to post their milestones, quarterly reports and financial summaries online, ‘thus streamlining the demands on theme leaders’ (Desert Knowledge CRC 2005:34). The automated and streamlined milestone reporting was introduced to create efficiencies in the ‘machine’. But the time that a bureaucratic ‘machine’ keeps does not always match the same time of an organisational ‘ensemble.’ As one DKCRC actor, Kylie, reflected:

**Kylie (quote 4)**

The time-frame one’s is an example of where there is a big difference. People who are struggling, or have regular family tragedies, or live very tough lives live a long way from conventional wisdom services live day by day and week by week, and the past is well known. Incredibly well known, but the future is much less clear. To talk about within DKCRC about 5,10,20 years ahead. They are very different time-frames. I drew up some polarities after a meeting that I got very frustrated with.

While the new tracking system was a part of the DKCRC ‘machine’, it also contributed to the performance of the DKCRC ‘ensemble’. As the DKCRC suggested, the introduction of this system ‘alleviated some of the day-to-day management stresses,
though the system is still dependent on close monitoring by the Theme Leader’, and was responsible for ‘significantly improving communication between projects and theme leaders’ (Desert Knowledge CRC 2005:15). It was a system that allowed actors to listen to one another, to see where they were situated in relation to others, and to adjust and harmonise their research practices with one another in accordance with these observations.

As part of the DKCRC objective for ‘increased social capital of desert people in their communities or service organisations’, the DKCRC developed an IP register and an ethics register (Desert Knowledge CRC 2006). The ethics register was used to monitor compliance not just with applying for ethics clearance, but also the IIPP. The register took details such as the name of the project, which organisational ethics committee the ethics application was lodged with, the ethics application and clearance number, when approval was given, and the duration of the ethics clearance. Assigning numbers to ethics applications and approvals, which is done through each organisational ethics committee, turns ethics applications into objects (or code) that can be followed and tracked through a system. Attaching the IIPP to the formal ethics approval process turned the IPP into a codified object that could slot into the workings of the bureaucratic ‘machine’. In this respect, the IIPP was machined through the DKCRC system of monitoring and compliance. I explore the use of ‘procedural ethics’ for tracking the IIPP in further detail in Chapter Six, where it is discussed in the context of personal ethics (or the ethics-in-practice) of DKCRC actors and how they navigated the machining of the IIPP in their own research practices.

‘Cups of tea’ and ‘bad tastes in their mouth’: relational order

When playing in an ‘ensemble’, unless you’re aiming for the genre of ‘difficult listening’, the aim is for all players to be in tune with one another and listen to each other for pitch, timing and tempo of the music. Without these techniques, the overall output of the ‘ensemble’ doesn’t quite work. In the DKCRC, while it operated as a ‘machine’, some actors considered the ‘ensemble’ aspects to be important contributors to research practices. As Kylie said in an interview:

Kylie (quote 5)

For me Desert Knowledge is still the individuals within it rather than the institution
[...] Part of what I’ve really learned in having the [good] fortune for 20 years of
working in cross-cultural work is that so much of it is actually about personal relationships. I mean that if [person A] can come for dinner on Wednesday night last week, and eat a good steak, and then the following morning get in a car and go into the police station and then get back to [Community A] in time for law business, and we've had a nice sit around, and a good talk, and a good meal, and then say goodbye. That's the feeling of a good relationship and us knowing that [person A] can come back and stay again [...]. It is so important to finish things feeling good about each other. It is so important to keep that strong. It is social relations that have kept this region, this really tough region, going. Economics are important, and country is important, but social relations are first and foremost, and if people finish meetings with confusion, or a sense that I don't understand, or a bad taste in their mouth, or antagonism [...]. And that's why I say cups of tea are important [...]. But it doesn't translate to research, it's not, it doesn't look good as an output or an outcome. There is still in DKCRC an emphasis on outcomes [...] and building relationships is one of our milestones.

Within the DKCRC, where legalised structures gave form to partnerships, relational order was just as important as the rational order for research to occur. Creating partnerships through legal agreement may create the rational order through which a bureaucracy can account for time and resources, but relationships are a necessary component in research particularly in contexts where you seek to harness existing knowledge to understand how systems and environments in certain places operate. The DKCRC was also an ‘ensemble’ of actors who related to one another outside of the rational category of actors.

As Kylie indicated, in the quote above, the active part of building personal relationships, particularly in cross-cultural contexts, is important for research. The everyday aspects of life, like having a cup of tea with someone or sharing a meal or a chat, are important aspects of building and supporting relationships for cooperative research. This relational order may not sit neatly into the rational accounting system, as the actor above indicates, but they are an integral part of creating outcomes that can be accounted for. If actors leave meetings with ‘a bad taste in their mouth’, a sense of dis-ease can build which can influence and make the difference on whether or not they pursue research collaborations. Relational order can have profound impacts on research. Early misgivings or distrust can ‘leave strong imprints on the development of collaborative relationships in later stages of development’ (Vlaar, Van den Bosch, and Volberda 2007:409). This suggests that while the CRC bureaucratic ‘machine’ may continue to function, that relational order influences the operations, not just of the research collaborations, but of the organisational ‘ensemble’.
As well as the act of building and maintaining relationships, Kylie indicated that relationally embodied knowledge is required for cooperative research. As she said:

Kylie (quote 6)

> There are some very committed people here, but I think there are some people here who could do with a long stint of living out at [a remote Aboriginal community]. Then the realities of what it is like here would be better understood, and not just intellectually but inside people — like in their heart rather than their head.

Relational order includes the positioning of people in the same network based on common intellectual understanding. Yet, the organisational ‘ensemble’ is not just a matter of positioning. In cross-cultural contexts, as this actor indicates, relational ordering in research necessitates understanding the lived realities in particular places on a deep interpersonal level. In contexts where knowledge is one of the ‘commodities’, this understanding builds the scaffolding through which trust flourishes. Knowing that someone else knows your expectations and will act in good will and faith are important for building trust (Costa and Bijlsma-Frankema 2007).

Relational order thus is equally important as rational order for sustaining the operations and relationships of a CRC. That is, the DKCRC required machinic qualities — where actors were cogs in the ‘machine’, and part of the chain of command; and they also required the qualities of an ‘ensemble’ — where actors actively listen to one another and watch for clues on tempo, timing and pitch. It is the ‘ensemble’ that allows cooperative research to flourish, and it is the ‘machine’ that provides the ridged structures that provide some stability to the relationships.

**Ordering and placing knowledge and research in the desert**

This section seeks to provide an overview of the ways that the DKCRC rationalised and relationised the ordering of its research projects, and the knowledge it sought to use to function effectively and efficiently to meet its legal obligations to the State. Through this section I explore how the DKCRC created a research structure, that was rationalised in the first instance through a discussion of DKCRC aims, missions and objectives, and then through the re-structure to fit more inline with the Australian National Research Priorities. I also map some of the ways that ‘The Desert Knowledge Story’ and the ‘desert knowledge’ brand were used as tools by the DKCRC to tell and brand its own
story about the history of the desert, and the ‘desert knowledge’ within it. These tools were instrumental in creating the ‘desert knowledge’ category, and placing desert research in relation to the powerful coastal regions of Australia. Through this discussion, I suggest that not only did the DKCRC create a new category of knowledge, but it rationalised Indigenous knowledge through ascribing it into the IIPP, and hence the operationalisation of the DKCRC, as ‘Indigenous intellectual property’. Indigenous knowledge, I suggest, was rationalised through the ‘Indigenous intellectual property’ category, and subsumed within the ‘desert knowledge’ category. Lastly, I suggest that to show its partners and others where the DKCRC research occurred, the DKCRC produced maps with each research project located on it. This mapping exercise was an attempt, I suggest, to create transparency of research and provided legitimacy to the notion of ‘desert knowledge’ that supported the DKCRC ‘machine’ and ‘ensemble’.

**Ordering knowledge: ‘Desert knowledge’ and ‘Indigenous Intellectual Property’**

The DKCRC ordered knowledge in a number of ways. In the first instance, the DKCRC geographically ordered knowledge in relation to the desert. The DKCRC created a new category of knowledge, ‘desert knowledge,’ to name itself as a CRC, and to bring together the disparate knowledge in the desert. The category was defined through the ‘The Desert Knowledge Story’, which told that:

> The diverse knowledge these Australians have about prospering in the inland is what we call ‘desert knowledge’. It’s this local, experiential knowledge that must be shared and developed if people living in the desert are to meet the challenges facing them and deliver value to Australia (Desert Knowledge CRC 2005:4).

While the category ‘desert knowledge’ was defined as ‘local, experiential knowledge’, the use of the category meant that all knowledge in the desert fell within the category. As I discuss in further detail in Chapter Eight, ‘desert knowledge’ created a hierarchy that subsumed the category ‘Indigenous knowledge’ within it and entangled the IIPP in particular ways.

In the second instance, the DKCRC legally and economically ordered knowledge through using the category ‘Indigenous intellectual property’ to refer to Indigenous knowledge. Categorising Indigenous knowledge as ‘Indigenous intellectual property’, as
I discuss in Chapter Five, changed the format of Indigenous knowledge into a standard classification, which allowed it to fit within the DKCRC ‘machine’ of reporting on the development of any IPRs, and the commercialisation arising from these IPRs. Classifying Indigenous knowledge through the lens of IPRs rationalised it. By closely aligning Indigenous knowledge with IPRs, Indigenous knowledge was judged against this category. As I discuss in Chapter Seven, this alignment had clear implications for how actors enacted the IIPP.

**Ordering research: themes and core projects**

There is no clear way to organise research on the desert. As Peter, a DKCRC actor, said:

**Peter (quote 7)**

> [we've] chosen deserts and the variety of issues is huge, and there is no simple obvious way to organise them, they are all fragmented, disconnected and it kept bringing all sorts of aspects.

The fragmented, disconnected nature of issues in the desert makes organising research into distinct areas difficult. The DKCRC ordering of these issues into themes and projects attempted to capture this complexity, and to bring together differing knowledge systems in the desert. Through research streams, the vast array of actors (including Centre Partners, Associate Partners, Affiliate Partners, and the researchers from each of these partners engaged in the DKCRC) were directed and assembled into a system that allowed the DKCRC ‘machine’ to operate, and the ‘ensemble’ to perform. The DKCRC created a system of themes and projects for standardising knowledge/s in ways that allowed the knowledge to be compared for monitoring and reporting on outputs, while also allowing the gathering of actors who could perform together.

**Table 7 DKCRC Research Themes – prior to 2005**
Prior to the restructure, research at the DKCRC was ordered into four themes (Table 7 and Figure 1) that appeared to closely follow the logic of the DKCRC objectives (Table 4). The restructure of the DKCRC in mid-2005 saw a re-ordering of research based on three program areas that included six core projects, and an area dedicated to education and training, social science coordination and external contracts (Table 8, Figure 2 and Figure 3). The 2005 restructure of research from themes to projects was rationally justified by the DKCRC because, as the 2005-06 Annual Report stated, it ‘helps us to emphasise the integrative benefits from research, and allows us to adhere more effectively to the Commonwealth Government’s National Research Priority Goals’ (Desert Knowledge CRC, 2006:16). Changing the themes to core projects legitimised the State ordering of research. It deterritorialised DKRC research priorities derived, in part, from desert communities and peoples and the DKCRC partners; and reterritorialised the research as an extension of the national research priorities.
Table 8 DKRC Core Projects – after 2005

<table>
<thead>
<tr>
<th>Program</th>
<th>Core Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program 1. Desert Enterprises</td>
<td>CP1: Livelihoods inLand&lt;sup&gt;TM&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>CP2: Desert Industry Opportunities</td>
</tr>
<tr>
<td></td>
<td>2.1 Bush products from the desert</td>
</tr>
<tr>
<td></td>
<td>2.2 On Track&lt;sup&gt;TM&lt;/sup&gt; desert 4WD tourism</td>
</tr>
<tr>
<td></td>
<td>2.3 21&lt;sup&gt;st&lt;/sup&gt; Century Pastoralism&lt;sup&gt;TM&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>CP3: Desert Businesses</td>
</tr>
<tr>
<td>Program 2. Desert Systems</td>
<td>CP4: Sustainable Desert Settlements</td>
</tr>
<tr>
<td></td>
<td>CP5: Accessible desert services</td>
</tr>
<tr>
<td></td>
<td>CP6: Thriving desert regions</td>
</tr>
<tr>
<td>Program 3. Desert Solutions</td>
<td>Education and Training, Social Science and Contract (not classified as a</td>
</tr>
<tr>
<td></td>
<td>Core Project)</td>
</tr>
</tbody>
</table>

(Source: Desert Knowledge CRC 2006:16)

The need to create greater efficiencies, and hence increasing the operations of rational order, creates tensions. In an organisation built on relationships, instituting a ridged form of rational order can risk the integrity of relational order that is required for it to operate. In considering the restructuring of research in the DKCRC actors themselves considered the changes and the impacts this had on the relational ordering of the DKCRC, as indicated in the following comment by Elliot, a DKCRC actor:

**Elliot (quote 8)**

I thought that the Core Project idea was trying to be too tight in its networking, but I think the reality is that it’s had to settle for a looser form of networking anyway. And that is fine. That is predictable really that that would happen. I think loose networks always end up prevailing. When people try to do tight networking in a sense they are almost bound to pull back from it eventually and what emerges is looser than what they perhaps thought [...]. I think loose networks in a sense have much more respect for actor’s autonomy in them, and try to bring, and try to harness that autonomy as energy for the group, for the larger group. Tight networks I think, to me tight networks fall down because they don’t respect various actors autonomy enough and they try to be too directive of those actors, and people react. In a sense, I do think that we all work best when we have a considerable degree of autonomy.

CRCs have to walk a fine line between ensuring compliance with a Centre Agreement, obligations to the State, and meeting obligations to the various partners. Establishing a research system that meets the National Research Priorities, and the desired research focus of the partners traverses the tensions between rational (‘tight networks’) and relational order (‘loose networks’), and between control and autonomy. It is the tension between the DKCRC operating as a ‘machine’ and an ‘ensemble’.
As the actor above suggests, when the rational order is not balanced with the relational order, actors find ways to loosen the grip of the ‘machine’, or to enable the ‘ensemble’ that is able to meet their own desires and motivation. As I discuss in further detail in Chapters Five and Six, the tension between rational and relational order played out in the enactment of the IIPP. This occurred through both the interpretation of ‘Indigenous Intellectual Property’, and how the IIPP ought to be enacted through formal university research ethics processes. Navigating rational order in research is not universally enacted however, but comes in a variety of forms, which I refer to as gatekeeping, guardianship and gatecrashing and discuss in further detail in Chapter Seven. I suggest that while Weber’s ‘iron cage’ view of bureaucracy may exist, some actors find ways of escaping that cage and expressing their own autonomy in ways that do not constitute outright resistance but rather have found ways of using the bureaucracy to provide them with the key/s to the cage, others choose to embrace the bureaucratic cage, and others still cut through the cage.

Placing research: in ‘backyards’ and on maps

DKCRC research was placed in two distinct ways. In the first instance it was placed geographically in an area that was considered remote and the ‘backyard’ of the powerful coastal regions. In the second instance it was placed on map to provide transparency and legitimacy for the DKCRC, and the communities they worked with. This section provides a brief overview of the placement of DKCRC research as the ‘backyard’ in remote regions, which is done to provide the background for a more in-depth analysis in Chapter Eight. This section suggests that placement of DKCRC research onto maps sought to increase the transparency of DKCRC research, while also providing legitimacy to the DKCRC.

Research focused on the ‘backyard’

Stafford Smith argues that the ‘functioning of outback Australia is driven by a definable set of features’ and ‘desert drivers’, including climate variability, scare resources, sparse population, remoteness, social variability, local knowledge and cultural differences. (Stafford Smith 2008:3). The idea that the desert is made up of a definable set of features and drivers, was portrayed through the numerous versions of the ‘The Desert Knowledge Story (Appendix 6 and Appendix 7). Which told, for example, that:
Chapter Four

Over two-thirds of Australia is arid or semi-arid. This is the ‘desert’ of Australia’s inland: the outback, the bush. It is a region of low and variable rainfall, where droughts and floods are the norm, population is sparse, and conventional agriculture is limited (Desert Knowledge CRC 2004:4).

One of the enduring features in the image of the Australian desert is that it is ‘remote’ — that it is ‘inland as hinterland’ (Heathcote 1987). In Australia this image derives both from popular narratives in Australian literature and scientific discourses (Bartlett 2001; Heathcote 1987). Through ‘The Desert Knowledge Story’ this idea was captured and portrayed through the term ‘backyard’, as the story told:

Until recently, there was no university or other body to coordinate research activities within Australia's desert regions. There were several reasons for this. The dispersed population meant limited critical mass for many purposes, not just research. Scant attention was paid to desert regions which are the ‘backyards’ of the state jurisdictions they spread across — resources are focused on the population-dense seaboard. (Desert Knowledge CRC 2004:5).

Positioning the Australian desert as the ‘backyard’ was a re-telling of the ‘inland as hinterland’ (Heathcote 1987), which placed it in opposition to the powerful coastal regions where policy was developed and then dished out on the deserts. Defining the desert in this way rationalised the existence of the DKCRC as a research centre in the desert that spoke to policy. It was a powerful narrative that was repeated by the DKCRC actors in research forums, The Desert Knowledge Symposium and in the interviews I conducted. Julianne, a DKCRC researcher, for example, influenced by this story said of the DKCRC:

Julianne (quote 9)

I like the idea that there is this concentration of energy and effort on the desert. It has been neglected. It is a new frame for thinking about the way that the whole country operates, a way of valuing what lifestyles and contributions, aspirations and all those clichés, but also what people and wants and desires in desert lands. And I like that it has drawn attention from the fringes — the gaping sores of Australia — in its own centre

The idea that desert is remote, as I discuss in further detail in Chapter Eight, also underwrote the relationship that Indigenous people/s have to the desert because it
defined power in terms of the control and reach of the State, rather than the control and reach of Indigenous people/s to the desert. This had the effect of destabilising the notion of Indigenous knowledge that had subtle impacts on the ordering and enactment of the IIPP.

Mapping research locations: transparency, legitimacy, place-branding

Julianne (quote 10)

There has to be more communication. It is hard to find basic things. Information. I mean where are Desert Knowledge projects, and who’s doing what parts? It is there, but I think attempts have been there to bring it forward, and it’s not simple enough. It’s not categorised enough.

The sentiments expressed by Julianne, were the same sentiments that I raised in my first presentation back to the DKCRC on this thesis. It seemed to me that accountability of research would come not only from how the DKCRC structured its research project, but also from letting people know where the research was being undertaken. The most accessible way of doing this, I argued, was through mapping the location of the research projects.

My initial observation was that while the website provided rich information on the DKCRC and its research, it did not clearly indicate ‘where’ this research was. Without knowing ‘where’ research is being undertaken, it is almost impossible for anyone to judge the effectiveness of a research protocol, and hence ethical research behaviours. At the time of my presentation I was informed that the DKCRC was undertaking a process to include maps of the research locations on their website. While the 2003-04 DKCRC Annual Report included a map with research locations, from 2004 to 2010 these maps included further details, such as community names, which made it easier to locate the research on the ground (Figure 4 and Appendix 4).
Mapping not only shows where something is, as Turnbull argues, it involves a process of standardisation whereby ‘all places and time have to be rendered equivalent’ (Turnbull 1996:18). Placing the locations of DKCRC research onto maps required the standardisation of research projects and places into points or dots that could be plotted. As the maps over time show us, the level of detail increased. The locations where DKCRC research occurred were named, which made DKCRC research more transparent. However, places like Alice Springs and Leonora became equivalent on the DKCRC map. This rendered cultural, social and knowledge differences invisible on the DKCRC maps.

As a practice that claims and brands territory, mapping provides legitimacy and validity to forms of knowledge and tell stories (Caquard 2011; Turnbull 2007). The act of mapping DKCRC research onto maps created the contours of the desert, branded this space/place as ‘desert knowledge,’ and gave the plotted form to ‘The Desert Knowledge Story’. The desert, in these maps, became a place where ‘desert knowledge’ is the key valuable commodity, and the maps showed not just where research was occurring, but where this knowledge was coming from. Together with ‘The Desert Knowledge Story’, and the desert knowledge brand, the desert became a ‘branded place’ (Aitken and Campelo 2011; Allen 2007; Bryant 2013; Freire 2009; Hanna and Rowley 2011;
Johansson and Cornebise 2010; Kavaratzis 2005; Pike 2009a, 2011; van Ham 2008). I discuss the process of place-branding in Chapter Eight where I explore how this process inferred a particular definition of ‘desert knowledge’ through which Indigenous knowledge was subsumed.

Conclusion

This chapter suggested that the DKCRC operated as both a bureaucratic ‘machine’ and an ‘ensemble’. I drew attention to ways that the management and governance structure of the DKCRC were developed to support the efficient operation of the ‘machine.’ I did this through exploring the function of Board and how the appointment of the Chair was done in accordance with State administrative guidelines. Through highlighting the way that the Deputy Chair of the Board was appointed, I drew attention to the DKCRC operating as an ‘ensemble’.

I highlighted that becoming an actor in the DKCRC required the existence and operationalisation of rational and relational order. To fit into the parts of the machine, actors were standardised into categories, and their relationships were legally recognised through contracts. The use of contracts, I suggest, is based on contractarian ethics, where actors negotiate and consent to the rules established in the contract, and are motivated by self-interest. The standardisation of the DKCRC actors also allowed accounting and monitoring of research through in-kind support, milestone reporting and registers. In these ways, DKCRC actors not only became a part of the machine, but were machined through their practices of tracking and monitoring their own time allocation to projects and the subsequent reporting of this through milestone reporting. Further, in-kind reporting also operated to engender relational order, through making commitments of time and other resources that created the basis for cooperative relationships.

I drew attention to how the DKCRC’s creation of a new category of knowledge, ‘desert knowledge,’ rationalised knowledge and created a hierarchy of knowledge with every form of knowledge subject to this hierarchy. In addition, I discussed in brief how adoption of the category ‘Indigenous Intellectual Property’ machined Indigenous knowledge, through attaching it to ‘intellectual property’ part of the machine that had an existing process for dealing with and reporting on intellectual property. I also drew
attention to how ‘The Desert Knowledge Story’ placed ‘desert knowledge’ research as the ‘backyard’ where the State dishes out ill-equipped policies from the Coast. This story justified the existence of the DKCRC as a body for creating place-based policy solutions.

In the next chapter, I treat the IIPP as an assemblage and highlight the three main perceptions of protocols and the IIPP as rules of engagements, the allocation of property rights to knowledge, and that research contributes to something. I explore the ways that the IIPP was assembled through property rights and agreements. I focus on how the DKCRC legal agreements played the dual role of providing rational and relational order through creating the rational structures for the relationships, which established the necessary structures for the partners to operate and to enact the IIPP. I suggest that the IIPP assemblage was built on contractarianism, consequentialist, rights-based and, deontological ethics.
Chapter Five. Mapping the protocol-as-assemblage: 
property rights, agreements and benefits

Introduction

*Think of a bicycle, which obviously has no ‘end’ or intention. It only works when it is
connected with another ‘machine’ such as the human body; and the production of these two
machines can only be achieved through connection. The human body becomes a cyclist in
connecting with the machine; the cycle becomes a vehicle. But we could imagine different
connections producing different machines* (Colebrook 2002:56).

By using Colebrook’s bicycle example I do not wish to overemphasise a materialist or
machinist notion of protocols. Nor do I use the example above to simplify the
discussion of protocols to one of a relationship between humans and machines. Rather
I use this example to provide a mental image through which it is possible to understand
the ordering of protocols and how protocols are enacted. Colebrook’s analogy is used to
explain assemblage thought. The example above highlights Galloway and Thacker’s
argument that ‘[p]rotocol facilitates relationships between interconnected, but
autonomous entities’ (2004:9). In this example, the protocol is the bike, the human, and
the set of skills and instructions that guide how to get on a bike, how to peddle, how to
steer, and how to break and watch out for traffic that leads to riding a bike safely.

Building on Galloway and Thacker’s argument I take a slightly different route in this
chapter to explore how protocols order the connections between ‘things’. Galloway’s
protocol-as-road rules, as discussed in Chapter Two, order through connections
between the human, the car, traffic lights, and roads (Galloway 2004). Berg’s (1998) and
Lynch’s (2002) protocol-as-recipe order through connections between the human, the
kitchen, and food. In this regard, I take Galloway and Thacker’s argument one step
further in this chapter to argue that protocol, rather than just the thing that facilitates
the relationship between entities, is itself an assemblage.

The notion of assemblage highlighted by Colebrook draws on Deleuze and Guattari’s
(Deleuze and Guattari 1987) assemblage thought. As discussed in Chapter Three,
assemblages are connections that are drawn from material, semiotic and social flows.
They are constituted through the horizontal axis that consists of contents and
expressions, and the vertical axis that stabilises it (territorialises) and carries it away (deterritorialises) (Deleuze and Guattari 1987). Assemblages are processes of organising, arranging and fitting together (Livesey 2010).

Through treating the IIPP as protocol-as-assemblage, in this chapter I map three functions of protocols more generally, and the IIPP specifically, as DKCRC actors expressed. These observations included that protocols and the IIPP were rules of engagement, assigned property rights to knowledge, and contributed to broader benefits to Indigenous people/s. Leaving aside the idea that the IIPP was a set of rules of engagement, I focus on how the IIPP assigned property rights to knowledge and contributed to broader benefits, and how the DKCRC ‘machinery’ and ‘ensemble’ enacted these. I suggest that these three aspects of protocols (rules of engagement, property rights, and contributing to something broader) drew broadly from deontological, consequentialist, rights-based and, contractarian ethics.

Mapping a bureaucratic protocol: rules, property rights and benefits

The IIPP was a two-page document broken down into the three sections of purpose, philosophy and practice (Appendix 1). It was put together by a ‘steering committee’ as part of the funding bid to the Federal Government’s CRC Program to establish the DKCRC. The DKCRC appeared to have established the IIPP in response to the narrative for recognising Indigenous rights to knowledge, and to assist with working through some of the ethical and legal aspects of accessing and utilising Indigenous knowledge. The IIPP operated through the mechanics of the DKCRC ‘machine’ and the ‘ensemble’. As the preamble text of the IIPP expressed:

\[
\text{It is a requirement of DK-CRC’s Centre Agreement that all participants be aware of the current Indigenous Intellectual Property Protocol, as amended from time to time by the Board. We are developing a risk management strategy to weave around this, to provide clear guidelines as to when low risk activities may be able to justify a less rigorous application of the following than high risk ones. \text{(NB. The IIPP refers in places to the clauses and definitions in the Centre Agreement.)}} \text{ (Desert Knowledge CRC 2003:1).}
\]
The preamble of the IIPP acted as a note for DKCRC actors to remind them that they were obligated, through the respective agreements that they signed, to have an awareness of the protocol. Linking it to the DKCRC Centre Agreement and the Board, embedded the IIPP within the rational ordering of the DKCRC ‘machine’. Assembling the IIPP as part of the extended network of DKCRC agreements also embedded the IIPP within the relational ordering of the DKCRC ‘ensemble’. I discuss the use of agreements in further detail in the second part of this chapter.

The philosophy of the IIPP was to establish a strategy for the DKCRC to deal with the ‘risk of mishandling intellectual property’ (Desert Knowledge CRC 2003:1). It did this through a series of practices that covered a broad range of areas including: submitting research for ethics clearance (clause one); ensure the owners of ‘Indigenous intellectual property’ understand the research and give their consent (clause two); the collection of ‘Indigenous intellectual property’ (clause three), use and storage of Indigenous IP (clause four); uphold requests for confidentiality of ‘Indigenous intellectual property’ (clause five); ensure commercialisation of ‘Indigenous intellectual property’ only occurs with consent (clause six); and establishing an economic mechanism to ensure the distribution of benefits from DKCRC research to Indigenous people and communities (clause seven) (Appendix 1).

Two of the questions I asked in the interviews conducted with DKCRC actors were ‘what do you think a protocol is?’ and ‘what do you think the purpose of the IIPP is?’ The DKCRC actors I interviewed understood that the IIPP was a strategy to deal with the risk of misuse or theft of Indigenous knowledge. However, they went beyond this to say that the IIPP had other functions including: establishing rules of engagement; distribution of benefits; and assigning property rights. Their views were similar to those of Davis (2007), who argued that the IIPP aims to: protect Indigenous peoples’ rights and interests in their culture and heritage, provide ethical standards in research engagement and practice, allow opportunities to negotiate commercial outcomes and benefit-sharing, and encourage the management of IP (Davis 2007). These aims reinforced a mixture of ethical frames — deontological, contractarian, rights-based and, consequentialist (utilitarian) ethics — which ordered DKCRC research practices and Indigenous knowledge both rationally and relationally. The remaining part of this
section provides an overview of different aspects of the IIPP and which ethical framing it reinforced. I leave aside until Chapters Six and Seven a detailed analysis of how these ethical framings influenced the enactment of the IIPP.

**'Rules of engagement': micro-objectives about the practice of research**

Protocols, as discussed in Chapter Two, are often referred to as guides or a set of rules for engagement that prescribe the ways that actors ought to act and behave in situations with other actors. This theme emerged through the case study of the IIPP. As two separate DKCRC actors said:

**Peter (quote 11)**

I think it is a set of accepted, someone has thought about it, ethically accepted rules of engagement. About how to, and it is not necessarily a burden, about how to interact with stakeholders in the context of the DKCRC.

**Anna (quote 12):**

It links the facts of Indigenous peoples and communities are important. It has a strategic role, peoples expectations, it is about interactions, before during and after research, that even the visioning of the research needs to be taken into account the needs of the stakeholders and partners. There are some macro-objectives: the research contributes to something, micro-level: it is about individual researchers and projects and these rules of interactions and there is an education component of it.

Protocols, as Peter (quote 11) and Anna (quote 12) suggest, are ‘rules of engagement’ and ‘rules of interaction’. Anna suggests that these rules are part of the micro-objectives (or micro-level) that seek to order how individuals and organisations enact research practices. The ‘micro-objectives’ of the IIPP directed DKCRC actors to ensure that the collection, use and storage of ‘Indigenous Intellectual Property’ (clauses 2, 3, 4, 5 and 6) were done through established principles such as prior informed consent, and respect for confidentiality. This observation that protocols are ‘rules of engagement’ follows Galloway’s argument that protocols are ‘etiquette for autonomous agents’ (Galloway 2004:75). As argued in Chapter Two, considering protocols as etiquette highlights the existence of both rational and relational order. Through this conceptualisation protocols set the standards of communication, interaction and cooperation for relationships. It establishes how two entities ought to relate to one another. Additionally, the observation that protocols are rules of engagement, in some ways resembles the notion of the protocol-as-recipe, which sets out instructions for how to prepare a dish.
The IIPP ‘rules of engagement’ were distributed throughout the clauses and included a specific requirement for DKCRC researchers to submit their research proposals through a Human Research Ethics Committee (HREC) for approval. This approach extended a rational approach to ethics, where a standardised approach was taken to establishing and judging the ethical merits of the rules of engagement. The IIPP also included the requirement to ensure consent is given, by the owners of the research to the use of their knowledge. The observation that protocols are ‘rules of engagement’ focuses on the process of research, rather than just the outcome of research. Practices concerned with the means, rather than just the end, as discussed in Chapter Two, are deontologically driven. Any evaluation of the effectiveness of the protocol would place emphasis on the process rather than just the outcome. If the ‘rules of engagement’ were considered as being mutually negotiated then, under this conceptualisation, protocols informed principally by this observation would be based on a contractarian approach. As discussed in Chapter Two, a contractarian approach to protocols would be guided by actors who sought to establish mutually beneficial processes, but did so in ways that increased their own self-interest. This one observation provides two possible ethical frames through which it is possible to understand and conceptualise protocols. I leave further discussion of the IIPP as ‘rules of engagement’ to Chapter Six, where I explore the rational and relational ordering of the IIPP through ‘procedural ethics’ and ‘ethics-in-practice.’

*Necessary rights over some of the knowledge*: property rights, contracts and ethics

The idea that protocols afford rights to Indigenous knowledge emerged from the interviews. As three DKCRC actors stated:

**Justin (quote 13)**

I suspect it is about ensuring that the Indigenous Intellectual Property Rights are respected. And you know if any of these issues emerge during the research we can ensure that Indigenous people and communities are accorded the necessary rights over some of the knowledge that becomes part of the research, and that that knowledge is protected.

**Joe (quote 14)**

[...]it's probably two-fold to make sure that DK-CRC has rights to research generated through them or through projects that they fund [...], and secondly to protect any
groups Indigenous or non-Indigenous who are involved in the research that they fund.

Michael (quote 15)

My observation, which is reflected by the file that I’ve just dragged out from last year, was that of the two linked concepts of ethics and IP – and I think they are probably linked and they are certainly linked in my mind because I have information from both in the same file – there’s a lot more on ethics than on IP. And certainly the actual projects that ran did spend a lot of time on their ethics approval, they spent a lot of time talking to their ethics committee or their references groups, or both, and far less time conceptualising intellectual property.

As Justin (quote 13) suggested, the IIPP was established to ensure that Indigenous people and communities were conferred rights to their knowledge that formed part of the DKCRC research. The IIPP however did not just assign rights to Indigenous people and communities, as Joe (quote 14) suggested, it also conferred rights to DKCRC to the research outputs that they funded. IP is one of the main research outputs of CRC research, and as discussed in Chapter Four, the DKCRC established the IIPP to meet not just the needs of Indigenous people and communities, but also the State regulations that their Centre Agreement establish the rules governing IPRs and commercialisation. The IIPP was not just a protocol about the processes of research; it was specifically focused on the recognition of rights to Indigenous knowledge. For example, clause two of the IIPP stated:

*Projects which access or depend on Indigenous Intellectual Property must ensure that the owners of that Indigenous Intellectual Property have a clear understanding of the purpose and conditions of the research and its potential use and commercialisation, and that they have given their informed consent* (Desert Knowledge CRC 2003:1).

There was, as Michael (quote 15) intimated, a strong relationship in the IIPP between IP and ethics. The IIPP instilled rights to Indigenous knowledge through using the ‘Indigenous intellectual property’ category, and legal agreements to assemble this category across the DKCRC network. The IIPP, however, was also heavily dependent on ethical principles derived from research ethics. The main clauses of the IIPP, excluding clauses related to commercialisation (clauses six and seven) and to improve the protocol (clause eight) were standard ethical research principles for human research
and for working with Aboriginal and Torres Strait Islander peoples. For example, the IIPP clause on the ‘use and storage of information’ (clause four) derives, from the AIATSIS principles on ‘use of, and access to, research should be agreed’ (principle eight) (AIATSIS 2000).

_The research contributes to something:_ macro-objectives about the outcomes

Anna (quote 12) also suggested that the IIPP included the ‘macro-objective’ — that the DKCRC research itself should contribute to something such as better livelihoods for Indigenous people/s. In Australian research ethics guidelines the ‘macro-objectives’, or the outcomes, are referred to as ‘benefits’, and a substantial amount of space in the AIATSIS, and other, guidelines (AIATSIS 2000, 2012; Commonwealth of Australia 2003) give a substantial amount of space to explaining the need for benefits of research. Clause seven of the IIPP clearly articulates this macro-objective. This clause, as I discuss later in this chapter, established a mechanism that sought to institute distributive justice, but in a way that maintained control in the DKCRC hierarchy.

Leaving aside the analysis of ‘rules of engagement’, which I discuss in Chapter Six, the remainder of this chapter further explores how the consequentialist and rights-based ethics in the IIPP ordered Indigenous knowledge rationally, and how this was extended through the use of agreements. Through the last parts of this chapter, I seek to also highlight how the IIPP used the DKCRC hierarchy — through the Board and the Company — and a mechanism to embed distributive justice.

Assembling the protocol through property rights and contracts

The DKCRC, as discussed in Chapter Four, was required by the State to establish the rules governing intellectual property rights, and to have these rules appear in its Centre Agreement. It achieved this, in part, through establishing the IIPP, which assigned property rights to Indigenous knowledge through employing the ‘Indigenous intellectual property’ category. The DKCRC faced the possibility that DKCRC actors would neither understand the category nor be motivated to support the precept that it held. As Collins argued, ‘[i]f you want to establish loyalty and commitment, give someone a present, but if you want something in particular, make a contract’ (Collins 2003:1). As Collins suggests, contracts and agreements greatly increase the ability to ensure compliance and
to monitor activities. To increase compliance with the broader principles of the protocol and the precept that Indigenous knowledge includes associated property rights, the DKCRC embedded the IIPP within its network of agreements, starting with the Centre Agreement.

While the IIPP appeared as a single document, in reality it was part of the assemblage of the suite of DKCRC legal agreements including the Commonwealth Agreement, Centre Agreement, Partner Agreements and Student Agreements. As discussed in Chapter Four, the agreements were a part of the DKCRC ‘machine’ that established the legal parameters of becoming DKCRC actors. Assembling the IIPP as part of the suite of DKCRC agreements instituted a contractarian approach that allowed cooperative research to occur through negotiations, and which influenced how the DKCRC subsequently enacted the IIPP. While the DKCRC used agreements to embed the IIPP within the network of partners, this action also allowed the DKCRC to further reinforce it as a ‘technique for achieving voluntary regulation within a contingent environment’ (Galloway 2004:7). That is, a contractarian approach made the IIPP, a part of the voluntary association of DKCRC actors and part of the rational order of the bureaucratic ‘machine’ where actors may have been influenced to enact the IIPP purely out of self-interest.

The IIPP specifically sought to regulate the research practices of DKCRC actors who wanted to use, collect, store, publish or commercialise Indigenous knowledge. Tying the IIPP to the DKCRC agreements distributed control over ‘Indigenous intellectual property’ to the extent that DKCRC actors, who — despite being a part of the DKCRC network — maintained autonomy as individual researchers and organisations. Assembling the IIPP as part of the rational-legal order reinforced the DKCRC authority and hierarchy to monitor the research activities of the DKCRC actors. It also allowed the DKCRC to standardise its approach to monitor how DKCRC actors’ research practices complied with the IIPP. The IIPP thus formed part of the regulatory framework to control the research practices of DKCRC actors. In this way, IIPP acted as an administrative tool that fit into a framework of agreements and a managerial model of accountability requiring a ‘paper trail.’ I discuss how this was achieved in further detail in Chapter Six through an analysis of ‘procedural ethics’, and the
associated ‘paper trail’. The dual function of distributing control between individual
DKCRC actors and the DKCRC was an expression of the contradiction which
Galloway argued protocols consist of (Galloway 2004:8) between one mechanism that
‘distributes control into autonomous locales’ and another that ‘focuses control into
rigidly defined hierarchies’ (Galloway 2004:8). How the DKCRC hierarchy was used to
monitor one particular clause of the IIPP is discussed in the last section of this Chapter.

*Indigenous intellectual property*: a rational form of Indigenous knowledge

The development and introduction of the IIPP appeared to be based, in part, on the
consequentialist ethics and, in part, rights-based ethics. As discussed in Chapter Two,
consequentialist ethics refers to the idea that assigning property rights encourages
innovation; while a rights-based ethics suggests that rights to property is a matter of
justice (Drahos 1996; Hughes 1988; UNCTAD-ICTSD 2003). The manner in which the
IIPP was set up — so that it could fit with the DKCRC Centre Agreement, and to
supplement the commercialisation of IP — suggests that the IIPP was established based
of consequentialist ethics. However, the influence of Australian research ethics and the
literature on Indigenous knowledge suggests also that assigning IPRs to Indigenous
knowledge, as the IIPP did, could also manifest rights-based ethics. Addressing inequity
in research relationships is a matter of justice. Putting aside the rights-based ethical
aspects of the IIPP — which I explore later in this chapter — I focus in this section on
how the consequentialist idea of property rights was expressed through the IIPP, and
how this rationally ordered DKCRC research practices and Indigenous knowledge.

Using the ‘Indigenous intellectual property’ category rationalised Indigenous knowledge,
through turning it into a format that allowed it to exist within a legal system that
recognised IP. As Anderson aptly points out in discussing Indigenous knowledge, the
‘law rejects difference presented to it in a radical way: it accommodates difference when
it is presented through the guise of its own categories and terms of reference’ (Anderson
2005:350). Despite a large body of literature rejecting the application of IPRs to
Indigenous knowledge (Drahos 2014; Janke 2008; Kennedy and Laeniak 2014; Posey
2002; 1996; Tobin 2013), the DKCRC chose to use a category it could easily
accommodated through the CRC system. Through referring to Indigenous knowledge
as ‘Indigenous intellectual property,’ the DKCRC standardised and deterritorialised
Indigenous knowledge into a unit of IP that allowed it to fit within the DKCRC ‘machine’ — the legal, economic and commercial interests influenced by financial reporting obligations to the State.

The IIPP itself, however, did not include a definition of ‘Indigenous intellectual property’. The DKCRC Annual Reports however provided some indication of how they defined ‘Indigenous intellectual property’. For example, the 2003-04 DKCRC Annual Report discussed ‘Indigenous intellectual property’ in the following way:

The nature of our research and its methodology demands that the issue of Indigenous intellectual property (IIP) be addressed. IIP can be as straightforward as knowledge of harvesting and processing native flora: ‘bushtucker’ skills. However, it may also extend to non-Western understanding of land, systems management and language (Desert Knowledge CRC 2004:13).

The conceptualisation of ‘Indigenous intellectual property’ put forward initially privileged a perspective that focused on skills and practices related to land and culture. This definition that territorialised Indigenous knowledge as situational knowledge, a more ‘localist’ (Turnbull 2009) conceptualisation of knowledge, which highlighted the ‘knowledge–practice–belief complex’ (Berkes and Berkes 2009:7). However, the localist conceptualisation of Indigenous knowledge changed as the DKCRC developed. One year into the life of the DKCRC the 2004-05 DKCRC Annual Report stated that:

IIP [Indigenous intellectual property] is a complex topic: there are fine lines between Indigenous cultural knowledge and intellectual property which required clarification prior to engaging with the world of finance and binding contractual obligations. The outcome of the Centre’s analysis was that Indigenous cultural knowledge should remain confidential, and that only research outcomes leading to marketable IIP should be discussed commercially (Desert Knowledge CRC 2005:11).

The 2004-05 definition of ‘Indigenous intellectual property’ divided it into a relational ordering of knowledge based on culture that should remain confidential, and a rational ordering based on intellectual property. This change deterritorialised and reterritorialised
Chapter Five

Indigenous knowledge through a machining of ‘Indigenous intellectual property;’ but these processes maintained the relational aspects of Indigenous knowledge. The attempt to draw a distinction between the rational and relational aspects of Indigenous knowledge is a clear indication that knowledge exists as an assemblage.

The change in definition was a result of discussions with others in the DKCRC (Desert Knowledge CRC 2005); which lead to the introduction of projects to further explore the rational and relational aspects of ‘Indigenous intellectual property’ and its relationship to the IIPP (Rea and Young 2006; Smallacombe, Davis, and Quiggin 2007). One of the projects introduced because of this discussion, the DKCRC Scoping Project on Aboriginal Traditional Knowledge (which I sat in on), engaged in an intense discussion on the application of ‘intellectual property’ to ‘traditional knowledge.’ As the final report for the project argued, ‘using the term “intellectual property” to define or describe Traditional Knowledge also has the effect of assuming from the start that this knowledge is a form of property that is the same as “property” in the western legal sense’ (Smallacombe, Davis, and Quiggin 2007:26). Not only, this, but as Anderson argues,

\[\ldots\] efforts to include indigenous knowledge in intellectual property in effect (re)expose contingencies in intellectual property law that are constant and have remained relatively undisclosed. In positioning indigenous knowledge within an intellectual property regime, the law produces a subject that is difficult to manage’ (Anderson 2003:10).

To understand and enact the IIPP, DKCRC actors had to understand what ‘Indigenous intellectual property’ was, and how — through the IIPP’s substantive clauses on ‘practices — it applied to their own research. While there were instances where the DKCRC attempted to define ‘Indigenous intellectual property — such as those above — the IIPP itself provided little in the way of a definition of this concept. As Michael (quote 15) indicated, while the IIPP included both ethics and intellectual property rights, it gave limited attention to the later. As Anna, a DKCRC actor, indicated:

Anna (quote 16)

The actual projects that ran did spend a lot of time on their ethics approval. They did spend a lot of time talking to their ethics committee or their
reference groups, or both, and far less time conceptualising intellectual property. In fact many of the projects in the proposals section that dealt with IP said there’s no IP that we can identify. So, I guess that brings me to my major comment about both the projects and the DKCRC protocol is that the protocol starts with sections on purpose and philosophy at a broad level but it jumps straight down into practices – and has a list of how many practices, eight practices - and then finishes. So nowhere in there is there any guidance on what actually constitutes intellectual property that should be taken into account in applying the practices enumerated, and nowhere is there any guidance to, or any sort of explanation of, the philosophy which says that Indigenous intellectual property has particular risks of mishandling that warrants special attention. So I guess to my mind most researchers looking at that would have stumbled at that point and said ‘oh well there’s no IP’ and just moved on.

Without the guidance of a definition of ‘Indigenous intellectual property’ in the IIPP, DKCRC actors had to work from their own pre-existing understanding of Indigenous knowledge, knowledge, and intellectual property rights to derive a working definition of ‘Indigenous intellectual property’. The distinction given in the 2004-2005 DKCRC Annual Report — between information that should remain confidential and information that can be commercialised — is not an easy one to make, especially for early career researchers or researchers who have limited research expertise working with Indigenous peoples and Indigenous knowledge. Conflating the two would be an easy thing to do. As Julianne, a DKCRC actor, said:

**Julianne (quote 17)**

> Traditional knowledge would have to be discussed in any collaboration, and the place of traditional knowledge and the connection it had with intellectual property […]. Traditional knowledge, and I possibly would have conflated the two, but having had the experience of [discussing it, I am now] much clearer [at] distinguishing them.

Using the category of ‘Indigenous intellectual property’ was not a guarantee that DKCRC actors would understand or respect the precept that Indigenous knowledge includes associated property rights. DKCRC actors had to determine if the IIPP applied to their research. As I discuss in Chapter Seven, to determine this the ‘Indigenous intellectual property’ category acted as a filtering mechanism to assist DKCRC actors determine if the knowledge they were accessing in their research should be subject to the IIPP. The establishment of a protocol without definitions of the key concepts leaves a lot open for interpretation. The IIPP thus placed control over the definition of
‘Indigenous intellectual property’ in the hands of individuals and organisations, which had implications for the enactment of the IIPP. With an assortment of frameworks informing the IIPP the DKCRC actors enacted the IIPP in a variety of ways borrowed from their own research experiences that showed preferences and motivations stemming from self-interest and the interest of others. I follow up on this key point in Chapter Seven where I explore the enactment of the IIPP in terms of gatekeeping, guardianship and gatecrashing.

Collins statement in the introductory paragraph to this part was used to explore the prevailing notion that contracts are a ‘discrete, voluntary form of human association’ that are used by organisations to achieve a particular outcome (Collins 2003:1-2). Collins made the statement to subsequently argue that contracts are ‘embedded in conventions, norms, mutual assumptions and unarticulated expectations’ (Collins 2003:1-2); which makes all contracts ‘incomplete contracts’ (Grossman and Hart 1986; Hart and Moore 1988, 1999). The absence of a definition of ‘Indigenous intellectual property’ suggests that the regulation of the IIPP was based on ‘incomplete contracts’. As I discuss in Chapter Five this influenced the way that the IIPP was enacted.

Sharing the benefits: using the hierarchy for distributive justice

Anna (quote 12) suggested that the IIPP included the ‘macro-objectives’ that DKCRC research ought to contribute to something. Davis, who shared this sentiment, suggested in a presentation to the DKCRC Aboriginal Focus Group, suggested that the IIPP was for ‘achieving balance’ and created a ‘bigger picture’ of ethical and human rights obligations (Davis 2007). As discussed above, using the category ‘Indigenous intellectual property’ created a risk that very few benefits would accrue to Indigenous people, either because the category was ill understood or because of difficulties in calculating the economic value of it.

The IIPP included two clauses to ameliorate these risks (clause six and seven, Figure 5). The clause on ‘commercialisation practice’ (clause six) was established to ensure that DKCRC partners or researchers did not — either knowingly or unknowingly — commercialise ‘Indigenous intellectual property’ without the informed consent of the Indigenous peoples and community who have interests in it. It did this through
establishing the Board as a chain in the control of the commercialisation of ‘Indigenous intellectual property’. Requiring all proposed commercialisation of ‘Indigenous intellectual property’ to pass through the Board thus assembled the Board as an entity of the IIPP which exerted control over the assemblage. It also established the Board as the authority on determining consent. The positioning of the Board in relation to making determinations of consent is discussed in more detail in Chapter Six.

Figure 5 Clauses six and seven of the IIPP

6. **Commercialisation Practice**: If any research information, research results, research documents or intellectual property relating to Indigenous people ("Indigenous Data") collected, created or held as part of the Centre’s Activities is required for the purposes of Commercialisation, then the Board will ensure that no Commercialisation takes place until the Board has ensured that the Indigenous people and communities who have an interest in such Indigenous Data have given their informed consent to such Commercialisation.

7. **Commercial Benefits**: It is recognised that the evaluation of Indigenous IP is difficult in cross-cultural contexts and there is a significant risk that the value of Indigenous IP will be miscalculated. Therefore, to increase the likelihood of equitable benefits from any Commercialisation by the Centre, an amount from the total Commercialisation revenue of the Centre equal to the Company’s Participating Share will be allocated into a separate account, which will be used to fund research of a priority to the Indigenous community within the general aims of the CRC. [Clause 28.5] The Indigenous members of the Board will establish a group of Indigenous Trustees to manage these funds and determine, with the agreement of the Board, the research priorities for which they will be used.

(Source: Desert Knowledge CRC 2003:2).

*Written in Chinese and translated into English*/ Ngapatji-Ngapatji: distributive justice

Sharing the benefits of research, particularly where Indigenous knowledge is accessed is one of the key ethical principles of working with Indigenous people/s1 (AIATSIS 2012). In biodiversity related research where Indigenous knowledge is sought, access and benefit sharing (ABS) is one of the main principles of ‘equitable research’ with Indigenous peoples (Siebenhüner and Suplie 2005). ABS also provides the backbone for locating the principle of ‘free prior and informed consent’ (FPIC). Both ABS and FPIC presuppose the identification of owners to knowledge. Assigning owners to knowledge or intellectual property, and calculating the economic value of this knowledge is not always easy. This is particularly so in cooperative research projects where research partners bring their own knowledge to the endeavour and the parties cooperatively produce intellectual property. There are also difficulties with determining ownership of Indigenous knowledge in places where knowledge is communally owned, or where the knowledge may exist across large geographical areas2.
Cognisant of these difficulties, clause seven established an economic mechanism to distribute benefits of DKCRC research to Indigenous peoples in the desert. The economic mechanism sought to specifically take ‘an amount from the total Commercialisation revenue of the Centre equal to the Company’s Participating Share’ and allocate it into a separate account for funding Indigenous research priorities. The Indigenous Trustee (the Indigenous members of the DKCRC Board), under this clause, was mandated to determine the research priorities for the administration of the funds.

As discussed in Chapter Four, the DKCRC was an unincorporated joint venture with Ninti One Ltd acting as the management company and trustee for intellectual property rights arising for the DKCRC’s research projects. The economic mechanism in the IIPP assembled Ninti One Ltd. (the Company) and the Board (the Indigenous Trustees) as a part of the protocol. This assemblage rationally ordered the DKCRC practices. The DKCRC, following an authoritative command written into the IIPP and reflected in the Centre Agreement, had to determine the amount that it would deposit into a separate account. The economic mechanism in clause seven was drafted in a way that embedded distributive justice through the practices of the DKCRC. The Indigenous Trustee of the Board, based on the same authoritative command, was mandated to meet and provide recommendations on the administration of funds. Utilising the Indigenous Trustees of the Board to oversee the administration of the funds stems from the idea that Indigenous peoples provide legitimacy to the decision because they are part of the broader relational network of Indigenous peoples in the desert.

There was unease about the approach taken to commercialisation in the IIPP. For some actors in the network, the IIPP economic mechanism lacked clarity, created confusion, and uncertainty. The economic mechanism in clause seven, as Anna (quote 18) and Julianne (quote 19) noted, was difficult to understand. Anna mused that the economic mechanism appeared to have been written in Chinese and then translated into English.

**Anna (quote 18)**

I actually think it’s the final clause in the IP Protocol, it always struck me that it was written in Chinese and then someone had tried to translate it into English. I really, it is really so hard for me to interpret what it is supposed to […] mean […] So yeah, its those words, ‘the Centre’, ‘the company’s participating share’. Those are the two things that make it hard for me to, at face value, understand what it means. But it
Mapping the protocol-as-assemblage

seems to me that they were difficult to understand. And we were giving this requiring researchers to comply with this protocol with really very little guidance or um support on what the meant and how to do it.

Julianne (quote 19)

I don't feel close to any opportunity for commercialisation from traditional knowledge, but in terms of using Aboriginal knowledge and using that in appropriate and respectful ways. I didn't really understand Clause 7. But then I didn't feel like I had a real need to either. For instance, why [is it that it] would be more equitable to have it bound to the commercialisation revenue and participating share and so on.

Julianne failed to see how the clause related to her, and questioned how this mechanism — for determining the economic benefits through commercialisation revenue of the company’s participating share — could be considered the most equitable approach to distributing benefits. Another DKCRC actor, Jody (quote 20), took this criticism of the economic mechanism a step further by questioning its basis and setting out to change it.

Jody (quote 20)

Not long after that I started to get uncomfortable about the DKCRC protocol cause part of this process you know I started looking at exactly what the protocol said and became aware that the Centre Agreement for DKCRC, which is the agreement signed for the Centre Partners agreement, which [the community] was not one but [but the university was], says that all new intellectual property is owned by Ninti One.

We entered into a process whereby we tried to see a generic approach to how Desert Knowledge CRC ascribes new intellectual property rights for projects in which Aboriginal people were sharing their traditional knowledge. And we ended up with, after several meetings and discussions, one final meeting at which [Person A] put forward the proposal that it should be Ngapatji-Ngapatji. And that’s how that approach came onto the table. I put forward the proposal that it should be a fifty-fifty split in the ownership of intellectual property, and that should be fifty per cent to [the community] and fifty per cent for everybody else. And that was what Ngapatji-Ngapatji encapsulated, in that proposal. [Organisation A] then drew up another legal document which was going to be the partnership agreement, the deed of agreement between [the university] and Desert Knowledge CRC.

So at that meeting there was quite a bit of discussion, and then the chairman of the council said to [Person A], ‘what do you think?’ I think it was very interesting that he didn’t want really to take the word of the white people but wanted to know what the Aboriginal man said. And [Person A] said ‘that in his view it would be a good thing for [that community] to enter into a research agreement with [that university] because it protected their intellectual property rights, and it ensured that the processes of interaction and engagement would be ethical.
Feeling uncomfortable about the economic mechanism, Jody sought to establish another mechanism that could ease this feeling. Thus, rather than allow the economic mechanism to order her research practices, Jody changed it for her own research. After a number of meetings with a specific community, through a long process of negotiation and reiteration, the parties entered into a research agreement that altered the economic mechanism for distributing benefits. The agreement changed the mechanics from one based on a price mechanism, to one based on a fifty-fifty split that reflected the concept Ngapatj-Ngapatji derived from the Pitjintjarra concept of reciprocity and exchange, and means ‘I give you something, you give me something.’ This translated the idea of ‘distributive justice’ in a way that could be more easily understood by those privy to the agreement.

In utilising this concept, and engaging in a process to establish an agreement that recognised ‘distributive justice’, Jody worked from relational order, rather than the rational order stipulated in the IIPP. Jody appeared to feel as though the rational order did not work for the community she was engaged in a research relationship with. Jody’s example indicates that not everyone enacted the IIPP in the same manner. There are instances where people questioned, circumvented, or even changed the protocol to meet the needs of Indigenous peoples and the researchers. Chapter Six explores in further detail the different ways that the IIPP was enacted, and suggests that Jody’s style of enactment could be considered as a practice resembling ‘guardianship’.

Conclusion

This chapter mapped the three broad ways in which DKCRC actors perceived the IIPP as rules of engagement, a tool to assign property rights to knowledge and, a mechanism that contributed benefits to Indigenous people/s. This chapter argued that the category of ‘Indigenous intellectual property’ was used as an entity in the DKCRC, which had the effect of rationalising Indigenous knowledge. I argued that the use of agreements extended contractarian ethics through the DKCRC network of actors, but that this was limited because the agreements were ‘incomplete contracts’. I argued that they were limited because the IIPP itself did not include a definition of IIPP. The interpretation of the category was left up to the DKCRC actors themselves who, through their own
personal research experiences, interpreted the category in particular ways that influenced how they subsequently enacted the IIPP.

To counter the possibility that DKCRC actors were unable to understand the category of ‘Indigenous intellectual property’ or would act in pure self-interest in their research practices, clause six of the IIPP required the Board ensure that consent was given by the relevant ‘owners’ of the Indigenous knowledge. Additionally, to counter the risk of miscalculating the economic value of ‘Indigenous intellectual property’, clause seven of the IIPP outlined an economic mechanism that relied on calculating benefits based on a certain amount of participating shares of Ninti One to be based in a separate account. To regulate this, the clause required the Indigenous Trustees of the DKCRC Board to distribute benefits to Indigenous people/s in the desert. This economic mechanism was based on the notion of distributive justice, which was based on a social contract (or contractanism).

As I explored in the later part of this chapter, the economic mechanism was ill understood by the DKCRC actors. Rather than accept the economic mechanism at face value one DKCRC actor questioned the calculations used to determine the price of ‘Indigenous intellectual property.’ Rather than act in a rational manner, based on self-interest this actor fought to change the clause to allow a fifty-fifty split in the commercial benefits. This, as I argued, suggests that individual actors enacted the IIPP relationally.

This chapter suggested that the IIPP was established on a variety of ethical frames. Establishing a protocol on a variety of ethical frames is not in and of itself a problem. However, as I explore in the next chapter, building a protocol on deontological and utilitarian and contractanism ethics creates difficulties. These difficulties arise through the process of interpreting compliance with a protocol. The next chapter picks up, and explores in more detail, the perception that the IIPP was a set of ‘rules of engagement’ and the difficulties associated with building a protocol on multiple ethical frames. It does this through exploring the way that the IIPP was tied to ‘procedural ethics’ process of Human Research Ethics Committees, and the way that DKCRC actors ‘ethics-in-practice’ influenced the interpretation of it.

Introduction

In the previous chapter I mapped three ways that DKCRC actors perceived the IIPP and suggested corresponding ethical frames. This chapter explores the observation that the IIPP functioned as a set of ‘rules of engagement’ or ‘rules of interaction’. Through Guillermin and Gillam’s handling of ethics, I treat the IIPP as an assemblage of ‘procedural ethics’ and ‘ethics-in-practice’ (Guillemin and Gillam 2004). I use this distinction to explore the material and expressive aspects of the IIPP assemblage; and ways that the IIPP rationally and relationally ordered research practices and Indigenous knowledge, and which DKCRC actors’ rationally and relationally enacted the IIPP. Within this chapter I also sketch some links between the perception and practice of the IIPP as a set of ‘rules of engagement,’ and contractarian and deontological ethics.

Through exploring the existing literature on protocols in Chapter Two, I sought to provide a greater variety of metaphorical language for understanding protocols. In this chapter, through using the fugal method more fully, this chapter, returns to some of the examples raised in the previous chapters. I do this to further map some of the themes (the subjects, the first voices) raised by DKCRC actors. While maintaining the protocol-as-assemblage argument, this chapter draws on the ideas of protocol-as-road rules and protocol-as-recipes to explore routine and non-routine enactment of protocols. As the title of this chapter suggests, and as I contend in this chapter, assembling protocols through the rational order of an organisation (that is, through the ‘machine’) may create routine standardised research practices, but research actors — who do not always conform to the utilitarian idea of the rational self-interested individual — may enact protocols in non-routine ways.

Procedural Ethics: ‘machining’ and ‘ensembling’ the protocol

One way to govern access to knowledge, track accountability and ethical practices in research is to do just what Hansel and Gretel did; leave a trail to follow. A paper trail is the path through which the administration of accountability can be performed with efficiency and objectivity in a bureaucracy. It is an approach to ethics built on regulatory and audit tactics that combine ethics with risk management (Cannella and Lincoln 2007;
‘Procedural ethics’ (Guillemin and Gillam 2004), or formal ethics, is a rational approach to ethical research practices. Formal ethics is based on a method whereby an actor reads a specific set of ethical rules and guidelines, and in a written application to a research ethics committee indicates how they will follow the ethical guidelines in their research practices. The aim of formal ethics is to streamline the deliberations of research ethics into processes that can operate as part of the machine. The ethics application process includes submitting paperwork to a Human Research Ethics Committee that indicates how the researcher will gain prior informed consent, whether their research has any risks associated with it, and how the researcher will manage those risks. Procedural ethics is founded on the idea that the risk to research participants posed by self-interested researchers can be managed by putting in place checks and balances to oversee researcher practices. As I discuss later in this chapter, the procedural style of ethics administration draws heavily from contractarian ethics, and is interwoven with deontological concerns for the means, rather than just the outcome.

The ethical failings of some researchers and institutions has given rise to a ‘climate where institutions feel unable to trust researchers to “do the right thing”, and have thus turned toward bureaucratic control to ensure ethical compliance’ (Allen 2008:106). Ethical review processes have become an ‘obligatory passage point for all research with human beings’ (Jaspers, Houtepen, and Horstman 2013:311). They have become a standardised approach to research and part of the rational ordering of ethics. It can be traced to Weber’s argument on bureaucracy and rationality (Haggerty 2004). Haggerty, referring to this development as ‘ethics creep,’ argues that it involves the expansion of regulatory structures of the ethics system outwards, and the intensification of regulation of practices deemed to fall within its gamut (Haggerty 2004). As discussed in Chapter One, this approach to ethics emerged through the *The Nuremberg Code* (Connolly and Reid 2007; Gorman 2011; Haggerty 2004), and the *Helsinki Declaration* in 1964 (Gorman 2011; World Medical Association 1964). Both the code and the declaration that lay the grounding ethical principals from which the National standards and guidelines for ethical research are based that include: respect for autonomy, nonmaleficence and beneficence. This collection of ethical theories, particularly when applied to protocols, is drawn from contractarian and deontological ethics, which creates a normative framework for research actions (expressions) and uses the submission of ethics forms
(material) to stabilise it. Protocols not only sit across this ethical spectrum, but they are assemblages of these ethical frames.

**Machining the IIPP: assembling the protocol through procedural ethics**

Procedural ethics became an entity of the IIPP assemblage through clause one of the IIPP, which stated:

> Ethics: all Projects which deal with Indigenous Intellectual Property, Indigenous persons or communities will obtain ethical clearance and meet ethical practices which accord to National standards and AIATSIS Guidelines for Ethical Research in Indigenous Studies or such subsequently developed Guidelines as are adopted by the Board under this Protocol (Desert Knowledge CRC 2003:1).

Clause one of the IIPP required all DKCRC researchers (who sought to undertake research through the DKCRC that involved humans) to obtain human research ethics clearance from their respective organisations and to meet the ethical criteria set in National standards and the AIATSIS Guidelines. Clause one territorialised the IIPP as an ethical practice, which had the effect of providing the IIPP with scaffolding that connected it materially and expressively to the rational order of the bureaucratic ‘machine’. Linking the IIPP to existing institutional human ethics reviews standardised the ethics approval process for DKCRC researchers and, to some extent, the language for discussing research ethics.

Utilising procedural ethics as an entity of the IIPP blurred the distinction between the IIPP and national ethics guidelines. As Holly, a DKCRC actor, said:

**Holly (quote 21)**

The protocol is there but it is grounded in existing guidelines. Until you get to the commercialisation end there is not much difference from national guidelines and doing the right thing. [...] So, personally for me I know that it exists but I think that because we use existing ethics committee guidelines, that is bound by the same basis, we are going okay.

This DKCRC actor recognised the clear links between national guidelines and the IIPP and suggests that there were limited differences between procedural ethics and ethics-in-practice. The actor’s comment suggests that the ‘commercialisation clauses’ of the IIPP
made it distinctively different to national guidelines and standards. I agree with this actor, that the commercialisation clause of the IIPP made it distinctively different. However, unlike this actor, I think there are qualitative differences between procedural ethics and ethics-in-practices which are discussed in further detail later in this chapter.

The remainder of this section focuses on how ‘procedural ethics’ formed a material and expressive entity in the IIPP that formed subjectivities, and gave expression of the rational ordering of ethics giving form to relational ordering.

**Expressions: of how actors ought to act**

The normative framing of the IIPP was held together through a number of clauses. This included provisions that sought to ensure the owners of ‘Indigenous intellectual property’ ‘have a clear understanding of the purpose and conditions of the research and its potential use and commercialisation, and that owners have given their informed consent’ (clause two) (Desert Knowledge CRC 2003:1-2). The IIPP incorporated the notion that researchers identify the relevant owners of the ‘Indigenous intellectual property’ (clause two); and that researchers should not publish, commercialise or exploit ‘Indigenous intellectual property’ without the written informed consent of those who disclosed the ‘Indigenous intellectual property’ and without the written approval of the Board (clause three). The IIPP affirmed that ‘Indigenous intellectual property’ should not be: collected or held without the prior written informed consent’ of the owners; ‘used for any purpose other than for which it was collected’; used or published in a manner that will adversely affect interests of the research participants; be destroyed upon request of the owners; and not published in a manner that identifies Indigenous people or communities (unless written informed consent is given) (clause 4) (Desert Knowledge CRC 2003:1-2). The IIPP also asserted the application of the principle of confidentiality to ‘Indigenous intellectual property’ (clause five), and commercial rights associated with ‘Indigenous intellectual property’ (clause six). The last clause of the IIPP established a mechanism for distributing commercial benefits to Indigenous communities in the desert regions of Australia.

The IIPP aligned with the AIATSIS Guidelines, published in 2000, which established the principles of ethical research with Aboriginal and Torres Strait Islander peoples as: consultation, negotiation and mutual understanding; respect, recognition and involvement; and benefits, outcomes and agreements (AIATSIS 2000). The IIPP
normative framing coalesced around the AIATSIS Guidelines in the following ways. Firstly, the AIATSIS principle of ‘consultation, negotiation and mutual understanding’ were emulated in the IIPP’s clauses two and three on the identification and assigning of owners of ‘indigenous intellectual property’ and the use of written procedures of consent to utilise it. Secondly, the AIATSIS principle of ‘respect, recognition and involvement’ was reflected in the IIPP’s clause two on informing the owners of the knowledge about the research and the intended use of the knowledge. Thirdly, the AIATSIS principle on ‘benefits, outcomes and agreements’ was reflected in the IIPP’s fourth clause on the use and storage of information, and on commercialisation of knowledge.

Normatively framing research ethics – and particularly through linking it to pre-existing guidelines and institutional research ethics reviews – creates a number of subjectivities (Martin and Inwood 2012), and exposes the contradictions in how to morally judge research acts (Bauman 1993; Hay 1998a). The second point is discussed in further detail in the context of ethics-in-practice in the second part of this chapter. Picking up on the first point, I explore Martin and Inwood’s argument that institutional research ethics reviews create the subjectivities of the institution, researchers and subjects in research (Martin and Inwood 2012). Through this process institutions are positioned as the moral authority, researchers as powerful actors who have the potential for ‘dangerous’ research practices that may cause harm, and subjects (or research participants) as ‘powerless’ actors who need protecting (Martin and Inwood 2012). The collective assemblage of enunciations of the IIPP shaped the subjectivities of the DKCRC (the Board), DKCRC actors, and Indigenous individuals and communities. I explore each of these in turn in the following paragraphs.

**Positioning subjectivities: re-visiting the Board**

The IIPP positioned the DKCRC, through the role of the Board, as the moral authority with responsibility for setting the normative ethical standards for DKCRC research. The IIPP positioned the Board to play the roles of controlling the publication, commercialisation or exploitation of ‘Indigenous intellectual property’ (clause 3(b) and 6); requesting that collected ‘Indigenous intellectual property’ be destroyed (clause 4(e)); managing funds procured through the commercialisation of ‘indigenous intellectual property’ and setting the research priorities for these funds (clause 7); and improving
and amending the IIPP (preamble, purpose, and clauses 1 and 8). It made (territorialised) the IIPP as a procedural entity, which invested control with the DKCRC.

The Board’s control of the IIPP was evident in the first statement of the IIPP which stated, ‘It is the requirement of the DK-CRC’s Centre Agreement that all participants be aware of the current Indigenous Intellectual Property Protocol, as amended from time to time by the Board’ (Desert Knowledge CRC 2003:1). The Board’s control was extended throughout the IIPP through the following parts of the protocol: preamble; purpose; philosophy; and clauses 1, 2, 3(b), 4(e), 6, 7 and 81.

It is the responsibility of Boards to oversee the management and governance of organisations. Boards set the strategic direction of organisations and ensure that they are met. The involvement and oversight of protocols by the Boards is a critical aspect in protocol implemented (Nakata et al. 2005a). Board composition then is an important aspect of oversight of protocols (Nakata et al. 2005a). Having Indigenous people on Boards ‘can provide an effective means for organisations to maintain a focus on Indigenous issues within their organisation and, importantly, to build good relationships between institutions and communities’ (Garwood-Houng 2005:152). As discussed in Chapter Four, the DKCRC Centre Partners aspired for Indigenous people to fill the Deputy Chair and two Board member positions (Desert Knowledge CRC 2004). Having Indigenous people on the Board provides legitimacy, not just to the DKCRC, but also to the oversight of the IIPP. Having only non-Indigenous people overseeing the IIPP would have raised serious questions about who has the legitimate power to change protocols that were established to protect Indigenous knowledge.

Positioning subjectivities: DKCRC actors

Linking the IIPP to procedural ethics is part of a broader move away from disciplinary codes of conduct towards the codification of ethics. The move is based on a move from the assumption of responsible researchers and academic norms, towards the mistrust of researchers (Guta, Nixon, and Wilson 2013; Haggerty 2004). In the substantive ethical clauses (clauses two to five) of the IIPP, the designation of moral responsibility to DKCRC actors to perform in particular ways suggests that they are actors who cannot be trusted, in their own right, to enact ethical research practices when it comes to
‘Indigenous intellectual property’. That is, it suggests that DKCRC actors who seek to access and use ‘Indigenous intellectual property’ are self-interested researchers guided by the desire to maximise their own utility. The clauses of the IIPP position DKCRC actors through the lens of utilitarian ethics. For example, clause two of the IIPP — which reads in part that the DKCRC actor ‘must ensure that the owners’ of ‘Indigenous intellectual property’ have a clear understanding of the purpose and conditions of the research and its potential use and commercialisation, and that they have given their informed consent’ — suggests that when given the option, DKCRC actors would willingly choose to use ‘Indigenous intellectual property’ without seeking the owners informed consent. Likewise, clause four (part ‘d’) of the IIPP — which reads that data relating to Indigenous IP and other personal information relating to Indigenous persons and communities ‘will not be used or published in a manner that is likely to adversely affect the interests of the particular research participants, particular Indigenous communities or Indigenous people generally’ — embeds the idea that DKCRC actors are likely to act in self-interest and publish ‘Indigenous intellectual property’ or other information without regard for the interests’ of Indigenous communities or Indigenous people.

Overwhelmingly, the substantive ethical clauses (clauses two to five) of the IIPP position Indigenous people and communities as powerless to make and enforce decisions about how researchers use and access their own knowledge. For example in clauses two, Indigenous people and communities are positioned as though they are unlikely to ask questions about the research that elucidates the true nature of the research, and the true motivations of the DKCRC actors. Clause four (part ‘d’) suggests that Indigenous people and communities will unwittingly share valuable and personal information with DKCRC actors. While there are possibilities that this is likely to occur, particularly given the push for researchers to create ‘real relationships’ and ‘real research partnerships’ with Indigenous people, it suggests that Indigenous people are unconscious of how information and knowledge flows throughout a group of people, or through a global market economy. I did not ask Indigenous people this question in the interviews, but without hard evidence I find this assumption hard to believe.
**Materiality: written applications and signatures**

The materiality of the IIPP arose when actors were required to submit an ethics application to a HREC with their respective institutions. They produced the application in written form with their signature, and included the provision of a draft written consent form for research participants to sign indicating that they give their consent to be a part of the research. Signatures are ways of signifying and validating consent. They are a material manifestation of an expression. Signatures exist to provide authentication of a person, security for the intent, and ‘assurance or evidence that a signer knowingly participated in signing’ (Hawkins 2011:7). The signature becomes the basis for proving the researcher has agreed to use a particular method and act in a particular way. It thus moves ethics from an inter-personal relationship based on trust to ‘do the right thing’ to a procedural process based on legal obligations as part of the system of auditing.

Auditing ethics becomes possible through using of a signature, and assigning an ethics application a unique identifier (also known as an HREC number). HREC then use this number to track the application and bring together all correspondences relating to the application. It is a method of creating order. Assigning numbers to ethics applications is a rational ordering that allows for auditing to occur. In the event an incident occurs, the paper trail acts as a material basis to inform the HREC on the parameters of the research, and what the researcher intended to do, and what the research subjects consented to do in the context of the research project. In theory, the paper trail provides a basis upon which complaints of unethical research can be lodged, and a process through which research organisations can manage risk.

The DKCRC established an ethics register to track research ethics applications, to minimise risk to its reputation and to act as a mechanism that allowed it to easily audit the implementation of the IIPP. The IIPP also materialised through the DKCRCs ethics register, an auditing process for keeping track of DKCRC projects’ ethics applications. The register included the HREC application number and allowed DKCRC staff to audit whether researchers had applied for ethics clearance, and to check the expiry date of ethics clearances for DKCRC projects. It was part of the broader strategy, including signing an agreement that the DKCRC employed to ensure compliance to the IIPP. Holly, a DKCRC actor, viewed it as an adequate process:
Holly (quote 22)

It is exceptionally rigorous we have Aboriginal people sitting on our human research ethics committee so I’m confident that it is rigorous enough. And then we supply the details of any ethics agreements or permissions to desert knowledge, so they have a central ethics register that we apply it to.

Supporting the need for a rational ordering of ethics, Anna argued that:

Anna (quote 23)

If you don’t have a review process you don’t actually have a standard to know if you’re operating ethically or not.

The IIPP also materialised when the HREC received the ethics application and met to make a decision on whether to approve the research. I did not have access to DKCRC actors’ ethics applications, but one could ponder whether the IIPP was explicitly cited in their applications, and whether citing the IIPP was used as a means of informing the HREC that they were contractually bound to uphold Indigenous ethics.

Through the IIPP and as part of their own institutional requirements actors engaged in DKCRC research were required to submit their research for ethics approval through a HREC and adhere to national standards and guidelines. The concept of consent is common to these procedures and explicitly mentioned in the IIPP. The next section provides an overview of consent, as academia understands it.

**Expressions and materiality: methods researchers plan to use**

The IIPP proposed to achieve the multiple aims of equitable research relationship, ethical research practices and the fulfilment of commercial interests, and to address risks in research through ‘practices’ associated with: ethics, practices of identifying owners of Indigenous Intellectual Property; the collection of Indigenous IP; use and storage of information; confidentiality; commercialisation practice; and commercial benefits (Desert Knowledge CRC 2003). The ethical expressions of the IIPP assemblage emerged through ethics applications, and the ideas that it held. Through the ethics applications DKCRC actors’ outlined their area of research, proposed method of inquiry, if any harm would likely occur from their research, and what benefits would arise from the research. Through the rule-based application of ethics, DKCRC actors sought to indicate how their research was in keeping with the ethos of the IIPP, and
Following the ‘road rules’ and the ‘recipe’?

national standards and guidelines. To show that the methods they chose would uphold the principles of *inter alia* consultation, negotiation, justice, consent, reciprocity, and respect. It was the HREC’s role to determine if the proposed methods and approach met those standards.

**Prior informed consent: contract ethics**

Consent is embedded in human right and was a large part of the IIPP. For example, clause four (part ‘c’) of the IIPP stated that any Indigenous IP and data:

*will not be used for any purpose other than for which it was collected without the prior written informed consent of the Indigenous persons that originally provided the information or the prior written informed consent of those person authorised by the relevant communities to make that decision* (Desert Knowledge CRC 2003:2).

And clause four (part ‘d’) stated that the same information:

*will not be used or published in a manner that is likely to adversely affect the interests of the particular research participants, particular Indigenous communities or of Indigenous people generally* (Desert Knowledge CRC 2003:2);

The principle of consent in research ethics derives from the first item in the *Nuremberg Code* (Haggerty 2004). This principle was created to ensure that those involved in ‘research’ and had the ‘legal capacity to give consent, could give their consent freely without deception, coercion or duress, and be given ‘sufficient knowledge’ about the proposed research (Anonymous 1949). The consent component in the *Nuremberg Code* placed the duty and responsibility for the quality of consent on those who initiated the process.

Consent is part of a larger group of autonomous actions (Faden, Beauchamp, and King 1986). From a moral, rather than a legal perspective, informed consent is an ‘autonomous authorization by a patient or subject’ (Faden, Beauchamp, and King 1986:3). Research is a process through which researchers and research participants explore options, identify common goals and build consent. Researchers cannot realistically foresee all the potential risks and implications of their research, therefore,
consent ‘hinges on ability to successfully communicate complex abstract and culturally alien concepts’ (Alexiades and Peluso 2002:221). Consent is best viewed as an ongoing ‘dynamic interactive cycle’ of consultation, and not an event (Alexiades and Peluso 2002). Or as Kleinig argues:

Where called for, consent can sometimes function like a proprietary gate that one opens to allow another’s access, access that would be impermissible absent the act of voluntarily opening the gate. Thus, I may consent to another’s sexual advance, use of my car, performance of an operative procedure, or dissemination of information concerning myself. Or, sometimes, consent can function like a normative rope whereby one binds oneself to another. Thus, I may consent to another’s offer of marriage or request that I give a lecture or join a committee. In each case, where the consent is viewed as opening a gate or as binding oneself, an act or outcome that would not be permissible absent the consent is given a normative sanction (Kleinig 2010:4).

When it comes to ensuring that Indigenous people give consent to use Indigenous knowledge, the tension between individually and communally owned Indigenous knowledge arises. Who ought to make the decision about the use and access of the Indigenous knowledge — should it be an individual or a community? As Julianne, a DKCR actor, said:

**Julianne (quote 24)**

The prime question is the question of ‘who makes the decision’ [...]. These clauses for protection – 4 c and d, and well there’s probably some of the other parts, but they just struck me that there was engagement with people who were knowledge holders who were going to be doing something, and quite a bit of the rest is not active. It’s more about protection by somebody else. There is something about that shift that seems key to me [...]. I don’t believe ‘d’ is possible. In terms of control and what happens. Both of these clauses (c and d) seem to me that you’d have to engage well to be able to do that so if you were able to meet those and handle that well then you’d have a good relationship.

It is not just a question of who owns the knowledge in an Indigenous community, but also who in a particular ecological environment owns it. Researchers in biodiversity conservation often ask this question because knowledge of biological resources often stretches across wide geographical areas, in which multiple groups have knowledge of the same species. For example, in Australia some Acacia species in the desert regions (e.g. Acacia aneura) are found in Queensland, Western Australia, South Australia and
the Northern Territory. Where species have use values relating to food and medicinal purposes, and where this knowledge is spread across regions, whom should the researcher ask for prior informed consent? The IIPP included a clause (clause seven) to deal with instances where knowledge is distributed across a vast region, or where no clear owners can be identified, as I discussed in Chapter Five.

Julianne identifies consents, which is concerned with issues of control, capacity, and power (Dodson and Smith 2003), as a key aspect of research practices. This is consistent with Kleinig’s (2010) observations that in the IIPP consent acts as a ‘proprietary gate’ and ‘normative rope’. Clause four particularly, operated as a ‘proprietary gate’ because it was an act of providing consent around the provision of information. Julianne suggests this type of consent is about ensuring that when the gate is opened, the information is used only for the purpose in which consent is given. It is, as the DKCRC actor above argued, permission granted that seeks to ensure ‘protection by somebody else’.

The dimension of consent as a ‘normative rope’ existed in the IIPP. As Julianne suggested, in order to meet the consent obligations of the IIPP in clause four (part ‘c’ and ‘d’), DKCRC actors would have to engage in research relationships. If DKCRC researchers were able to meet their obligations under this clause, as Julianne argued ‘then you’d have a good relationship’. While not explicitly stated, by ‘good relationships’ Julianne appears to suggest the type of relationship that is able to meet the ethical obligations of the IIPP. It reaffirms, perhaps unwittingly, a procedural approach to research relationships, and one that is clearly guided by a contractarian ethics, where people enter in relationships based on negotiating particular processes and outcomes.

While gaining ethics approval may assist actors to think about the ethical implications of their research, it does not ensure that they will behave ethically once they are in the field. Gaining ethics committee approval does not always necessarily translate to ethical research behaviour (Allen 2008; Guillemin and Gillam 2004). Guillemin and Gillam go so far as to argue that ‘procedural ethics has little or no impact on the actual ethical conduct of research’ (Guillemin and Gillam 2004:269). This is a simplified argument that assumes all actors engage, or do not engage, procedural ethics uniformly. It is a rational reading (of what is, in part, a relational process) that I don’t agree with. Researchers’ motivation, at least in part, and the extent to which they are willing to
engage in procedural ethics influences the enactment of ethics and protocols more generally. How actors enact protocols is explored in further detail in Chapter Seven.

Guta et al. suggest that the ‘ethics creep’ in research involves more than forcing actors to engage in a rational process (Guta, Nixon, and Wilson 2013). As they argue, ‘ethics creep’ should be ‘re-imagined as a phenomenon that implicates researchers, REB/IRB [Institutional Review Boards] members, and ethics staff within a shared system of constraints and opportunity’ (Guta, Nixon, and Wilson 2013:308). Using a Foucauldian analysis, Guta et al. argue that the human research ethics system has not developed in isolation, but within a system of power, what Foucault called an ‘apparatus’(Guta, Nixon, and Wilson 2013), that includes the discourse of neoliberalism that promotes autonomous self-interested individuals(Guta, Nixon, and Wilson 2013). The ethics review process sits at the crossroads of power/knowledge because it determines which methods can be used, what questions can be asked and for what purpose (Guta, Nixon, and Wilson 2013). Within the development of the bureaucratised ethics system, exists the tension between viewing actors as self-serving agents who cannot be trusted, and trustworthy stewards who ought to be merited with increasing autonomy. I pick up on the positioning of actors in Chapter Seven where I explore how the IIPP ordered research practices and Indigenous knowledge, and how DKCRC actors enacted the IIPP, through gatekeeping, guardianship and gatecrashing actions.

The existence of procedural ethics and protocols are not enough to ensure ethical research behaviour. As Guillemin and Gillam argue:

> It would be naïve and mistaken for ethicists to suggest that procedural ethics is the whole of ethics—that ethical issues in the practice of research can be entirely covered by the ethics committee process. It is within the dimension of ‘ethics in practice’ that the researcher’s ethical competence comes to the fore. By this we mean the researcher’s willingness to acknowledge the ethical dimension of research practice, his or her ability to actually recognize this ethical dimension when it comes into play, and his or her ability to think through ethical issues and respond appropriately. (Guillemin and Gillam 2004:269).
 Ethics-in-practice: relational ordering?

Ethics in practice, as Guillemin and Gillam argue, is the ‘day-to-day ethical issues that arise in the doing of research’ (Guillemin and Gillam 2004:264). Ethics-in-practice became an entity of the IIPP assemblage through the manner in which DKCRC actors enacted the IIPP in their research practices. The IIPP sought to establish a relational ordering of ethics through the utilisation of rational order. It was based on an assumption that actors behave rationally by following the rules. Yet, in practice this is not always the case.

Julianne (quote 25)

I was aware of the protocol and I suppose my sense was how was it enacted. When I first started on [Project A] I of course re-read the AIATSIS guidelines and read some other guidelines from the NHMRC which I don't think that I'd read before, and looked at them and thought ‘oh people follows these there is just so much in there so there on how do you actually make it happen.’ Probably why the strategy became less a series of an overhead and less about making it practically orientated on ideas on how it can be done. The basis for ethical research is there, but the how do people do ethical research is not there.

The sentiments of Julianne highlight aspects that I explore in further detail in this section on the how researchers behave in practice. ‘One of the paradoxes of the formal research ethics system is that there is often a distinct but unquestioned rupture between following the rules and conducting ethical research’ (Haggerty 2004:410). One of the difficulties with analysing protocols is that it is difficult to know how to make judgements about the enactment of protocols and what is right or just. If someone breaks the rules but there is a good outcome, how should this be judged? The sentiment expressed by Haggerty recapitulates the ongoing debates in philosophy of ethics around deontological, consequential, and contractual theories of moral action. These ethical theories are exposed when the practices of enacting bureaucratic protocols are considered, and how enactment interacts with additional protocols.

To speak of ethics is to speak about the notions of good, bad, right, wrong, appropriate and inappropriate. To behave ethically it to choose good, right and appropriate over bad, wrong and inappropriate. However, it is difficult to define ethical behaviour, and indeed what is good, right and appropriate. While rules and protocols provide a basis for traversing the slippery terrain of ethics in relationships, all relationships have some
form of temporal-placial processes. Therefore, what researchers consider ethical within relationships, while influenced by rules, is to some extent influenced by the time and place or context in which the relationships occur. ‘Imposed and formal approaches to ethics tend to detract from morality, I would argue, by blurring the need, and limiting the scope, for authentic personal responses to ethical problems’ (Hay 1998b). The ethics of cross-cultural research/reciprocity is relational and contextual (Rundstrom and Deur 1999). Ethics is not absolute standards but processes that bring about more just social relations (Herman and Mattingly 1999). We activate ethics in social practices.

The call for ‘relational ethics,’ or a greater ‘moral self’ as an alternative to ‘procedural ethics’ (Bauman 1993), still has to contend with how to judge actions. Focusing on how research is done in practice, and in particular ethics-in-practices, brings to the forefront the question of ‘how should research practices be morally judged’? While the IIPP establishes a series of clauses on how DKCRC actors ought to undertake research, it is silent on which ethical frames those involved ought to use to morally judge the enactment, or non-enactment, of those clauses. This section provides an exploration of the performance of research, and research ethics to show the complexity of research practices and research ethics, and the difficulty that such a task would entail.

**Expressions: multiple protocols and ethical theories**

One of the defining moments for me in the fieldwork was attempting to determine the benefits of the research for two Aboriginal communities I was hoping to work with. The requirement for justice (through the distribution of benefits), as alluded to at the beginning of this chapter, is a principle of procedural ethics. I was unable to see any use of the research that could provide specific tangible benefits to the communities I had hoped to work with. The communities, at least to my knowledge, from the outside appeared to already have their own existing robust protocols and guidelines for research in their communities. The only tangible benefit that I was able to determine was the improvement of the IIPP that could assist the communities with their own relationships with the DKCRC – something that already appeared, at least from the outside, to be robust. I asked myself ‘if they already had their own strong protocols why would I want them to partake in research to improve an external organisation’s protocols?’
There comes a time in the research process that researchers hoping to work with Indigenous people/s will face a situation where multiple protocols are at play. In this situation ‘the choice is not between following the rules and breaking them, as there is no one set of rules to be obeyed or breached. The choice is, rather, between different sets of rules and different authorities preaching them’ (Bauman 1993:20). The freedom to choose between differing sets of rules and authorities contributes to the formation of ethical ‘self-crafting’ actors or ethical ‘self-formation’ (Butler 2005; Foucault 1985; Mattingly 2013; Weiskopf and Willmott 2013). As Butler argues, an ethical order ‘compels the act of self-crafting, which means that it does not act unilaterally or deterministically upon the subject. It sets the stage for the subject’s self-crafting, which always takes place in relation to an imposed set of norms’ (Butler 2005:18-19).

Researchers, in this situation, have a choice between using the protocols of their own organisations and those of the Indigenous people/s they hope to work with. In this moment the moral authority of the DKCRC, and in particular the IIPP, was unstable and contested. A moral ambiguity emerged around whose moral authority I should follow as a researcher, and as an Aboriginal woman. This, as Bauman argues, is part of the ‘postmodern moral crisis’ (Bauman 1993). I highlight this, not to make a call to embrace moral relativism, but to underscore the competing normative frameworks that are at play in research, and to show the existence of ethics (and subjectivity) based on ‘self-crafting’ (Butler 2005). Limited guidance on the definition of ‘Indigenous intellectual property’ (as discussed in the Chapter Five) contributed, in part, to ‘self-crafting’ (Butler 2005) of protocol enactment, which I explore in more detail in Chapter Seven through the notions of gatekeeper, guardian and gatecrasher.

I was an early career researcher with limited experience approaching Aboriginal communities with which I had limited cultural or familial ties to undertake research. Given the history of research in Australia with Aboriginal people/s and the possible overburden of research on the two communities, I interpreted the relative silence of the community to my requests as ‘we do not have the capacity to do research with you’ or ‘the research has no benefit for us’. I chose not to push or pursue the communities. On reflection I realised that a number of conclusions could be drawn from my choice not to pursue research with the two communities. The first ethical conclusion is that while this course of action was, I believe ethical — and in keeping with broader guidelines on
research with Indigenous peoples; I was left with a case study that does not explicitly include the voices of Indigenous people. This is an outcome, which I believe, is unethical. I was in a situation where — through my course of action, the process and the outcome — an ethical contradiction emerged.

My own experiences and observation of the DKCRC actor, highlights some of the conceptual and ethical difficulties with utilising normative ethical approaches to research. Protocols and guidelines may provide principles for research, but how do we make decisions about the rightness or justness of actions arising from following them? As Hay argues, ‘normative approaches that underpin ethical decisions are contradictory’ (Hay 1998a:para 15). Hay’s statement is based on making a distinction between teleological (consequential) and deontological approaches in normative ethics. Hay clarifies his argument by providing an example of the different outcomes that may arise in the same situation when using a consequential and deontological standpoint. Hay used the example of the Hindmarsh Bridge dispute in South Australia (a dispute over the development of a bridge that hinged on the testimony and secret and sacred knowledge of Ngarrindjeri elder women that the site was a sacred women’s area that was disputed by other Ngarrindjeri women). The consequentialist approach, argues Hay, would justify making public the secret and sacred ‘women’s knowledge’ to prevent the construction of the bridge (Hay 1998a). A deontological view would require the researcher to maintain the secret trust, even if non-disclosure meant destruction of the site (Hay 1998a). Hay suggests that the contradiction arises due to different approaches offered by differing normative ethical frames. Ethical decisions are contradictory in research practices specifically because the normative framework, as historically built from The Nuremberg Code, reflects a variety of ethical theories (Halse and Honey 2005).

‘If you just know them as rules then you haven’t gone far enough’

Some DKCRC researchers, as well as submitting themselves and their research through the process of ‘procedural ethics’, also engaged in their own dialogue on the ethics of their research and what ethics means in practice. As four DKCRC actors explained:

Julianne (quote 26)

For readiness for engagement researchers and others needed to be aware of the body of protocols, or whatever, and particularly ones that may be particularly relevant for their area of work. For instance, the CLC research protocols in this area.
But, to work actually work respectfully you need to actually carry them yourself. You need to have your own protocols. So, I suppose that experience has shifted me a bit on that. You see you have to…it’s not following them or even providing guidance, but you have to create your own from the things you need to do. Whoever you are working for or with, there’s going to be requirements. If you are at a university, you do follow ethics – university ethics guidelines. You do follow an ethics process. You can choose to do that outside of universities, but it doesn’t happen all that often. When you don’t have that, particularly perhaps you have a series of policies or practices that are part of a […] culture and a practice that you work within and develop as your own, I think, so that you have a guideline yourself for acceptable and unacceptable practice that you are carrying with you I suppose […] It is about behaving in relationships and some set of guiding principles. And subject to change. It is about enacting change as you go along so that you…there is something more than having a guide some things are legitimate to change peoples minds, that is part of what you are doing. I think perhaps more formal research is a step back from that — not engaged in that — have your own yardsticks rather than something informal seems more important to refer to. And I suppose, this connects to communities of practice and reference groups. You don’t really sustain this. I suppose it does come around to saying that I don’t think they are static. I…If you actually seek to understand a well prepared protocol you are actually doing some of the reflection that you need to do, [but] if you just know them as rules then you haven’t got far enough, I don’t think, in understanding how to work with them.

Kylie (quote 27)

There is also a need for personal understanding at the heart level that sets the groundwork for ethical behaviour. There are some very committed people here, but I think there are some people here who could do with a long stint of living out at [a remote Aboriginal community]. Then the realities of what it is like here would be better understood. And not just intellectually but inside people. Like in their heart rather than their head.

Paul (quote 28)

It is all about grass-roots relationships mate. It is all about making it happen with the people you already know of, or people that we in the wider community know are good operators on the ground and are going to go out and do it the [right] way.

George (quote 29)

I kind of lived in a community for a few years and if you don't behave in a certain way that is very inappropriate, you know that you just don't get very far. I know that from my own experience that the best solutions are when you get… when local knowledge is integrated with external knowledge. So, to get that approach then you have to build trust, and you only build trust through behaving in appropriate ways and giving a lot of stuff back in addition to what you’re taking.
Written protocols can’t do everything, as these DKCRC actors suggest. These researcher are indicating, like Guillemin and Gillam (2004) and Allen (2008), that there is a clear distinction between procedural ethics and ethics-in-practice. Knowing the rules, and enacting them are two different things, as Julianne (quote 26) suggests. As Peter, a DKCRC researcher, joked:

Peter (quote 30)

And God knows researchers we all do it. I do it, we all do. That report is due next week. Forget about protocol. I need to quickly call someone and get something.

Galloway suggested the metaphor of protocol-as-road rules (Galloway 2004) to explain the rules that govern sets of possible actions within a diverse environment. Through this metaphor, Galloway made a distinction between road rules that request (stop signs, and traffic lights), and rules that materially compel (speed humps). While ‘procedural ethics’, with an ethics application and signatures, materially expresses a desire to undertake research in particular ways; it does not necessarily materially compel actors to follow the expressions they have committed to in their applications. The IIPP, even with the use of procedural ethics and contracts, was a protocol that requested rather than compelled actors to enact it. Therefore, the IIPP more closely resembled a protocol-as-recipe (Berg 1998; Lynch 2002; Staller 2010) that listed what was required to undertake ethical research practices, while leaving significant discretion on how it ought to be followed (Lynch 2002). This suggests, and as I discuss in Chapter Seven, that the enactment of the IIPP was likely to have considerable variability.

Discussions on the merits of procedural ethics and ethics-in-practice have critiqued the regulatory nature of procedural ethics and the way that it prescribes ethics and shifts responsibility for defining ethics from the individual to the institution (Allen 2008; Bauman 1993; Hay 1998a). Human research ethics committees (HRECs)/institutional review boards (IRBs) are said to subject researchers to a ‘disciplining gaze’ (Martin and Inwood 2012). As Haggerty argues:

modernity manifests a general trust in the ability of science to resolve our most pressing problems, we have become attuned to the truth that science itself poses risks and that these risks can no longer be explained away as temporary aberrations in the march of progress. While the natural and medical sciences have been singled out for producing some of our most colossal
risks, such as nuclear energy and genetic engineering, the social sciences are now also recognized as a risk-producing endeavor. Research ethics protocols are a formal attempt to manage such risks (Haggerty 2004:392).

This approach, some argue, poses dangers to the ability of researchers to conduct research (Haggerty 2004), and situates ethics in a compliance based approach (Allen 2008), rather than of an ethics of research based on inter-subjectivity or the respect for research relationships.

Institutions perceive the ‘compliance problem’, as Allen argues, on whether researchers have submitted their research for ethics clearance and comply with the methods approved by their institution (Allen 2008). Compliance, formulated in this manner, derives from Weberian thought whereby legitimacy for rules and regulations derive from rational-legal authority (Allen 2008; Haggerty 2004). The DKCRC approached compliance to the IIPP and research ethics more broadly in a similar manner when it introduced the ethics register designed to indicate which researchers had submitted an ethics review and which had not. However, the ‘compliance problem’, as Allen argues, might actually be the reliance on ‘directive rules and the threat of sanctions to modify researcher behaviour’ (Allen 2008:107).

Yet, if we consider protocols as assemblages of procedural ethics and ethics-in-practice that emerge materially and expressively, and with an axis of territorial stabilisation (‘lines of articulation) and deterritorialisation (‘lines of flight’) (Deleuze and Guattari 1987); then protocols, and in particular the IIPP, becomes an assemblage through which rational and relational order emerge, disperse and re-emerge. As Bauman recognised:

The social management of morality is a complex and delicate operation which cannot but precipitate more ambivalence than it manages to eliminate (Bauman 1993:13).

The management of morality, as Bauman suggests, does not eliminate ambivalence but heightens it. Moral phenomena, as Bauman argues, ‘are not regular, repetitive, monotonous and predictable in a way that would allow them to be presented as rule-guided’. It is for this reason they cannot be exhausted by an ‘ethical code’ (Bauman
Research ethics and the moral judgement of research ethics therefore, is not a simple act (or acts), which can be governed or judged by one set of ethical principles.

**Conclusion**

An analysis of protocols as an assemblage makes it possible to explore the entities that shape and form it. In this chapter I treated the IIPP as an assemblage of ‘procedural ethics’ and ethics-in-practice, and through this explored the dynamic tension between rational and relational ordering of protocols. This was done through mapping some of the material and expressions of procedural ethics and ethics-in-practice as entities of the IIPP. The first half of the chapter explored procedural ethics through mapping the material aspects, such as the submission of ethics forms and the use of signatures, and the expressions, such as proposed methodologies and the discourses that shaped procedural ethics. It suggested that rational ordering, through procedural ethics, fosters relational ordering, through coercing researchers to consider the positioning of others. The second half of the chapter explored the protocol as an ethics-in-practice. Through this, I suggested that while the IIPP was a set of rules, these rules were request rather rules that compel. Therefore, the likelihood of a variety of different types of protocol enactment in the IIPP was likely to be high.

There are difficulties with procedural ethics, and issues of usefulness and compliance. However, procedural ethics are particularly useful for propagating ‘relational order’ which seeks to re-distribute control and power in research relationships. They can be useful for some early career researchers who may have limited experiences working through ethical issues with their methodology, or for researchers engaged in ‘new’ areas of research through which evolving ethical issues are likely to emerge. Yet despite a normative approach to research ethics, through their research practices actors enact ethics in a less routine manner. While actors submit their research for procedural ethic clearances, through the practice of doing research, situations and moments arise where researchers face ethical issues. Normative ethics cannot consider all possible scenarios and moments that researchers encounter through the practice of research (Bauman 1993).

The next chapter explores some of the ways that DKCRC actors enacted, or were compelled to enact the IIPP. I do this through the typology of gatekeeper, guardian and
gatecrasher. Through the gatekeeping character, I suggest that some aspects of the IIPP compelled DKCRC actors to enact the IIPP as ‘filter’ to discern what ‘Indigenous intellectual property’ was, and through this act, DKCRC actors became the ‘switchman’ discerning what counted, and what didn’t count as ‘Indigenous intellectual property’. This act, as I suggest, has the potential to engender self-interested behaviour, because in a situation where there is ambiguity, and potential high transaction costs associated with discerning whether the knowledge they seek to access is ‘Indigenous intellectual property’ or who owns or control it, actors may be compelled to decide that the knowledge does not fit that category. Through the guardian character, I suggest that in the absence of clear guidance on how to enact the protocol, some actors enacted the IIPP out of altruistic motivations. Rather than seek to increase their own utility, they sought to engage in research practices that met the needs of the communities they were working with. Through the gatecrasher character, I seek to suggest that sidestepping protocols exists as a form of protocol enactment. In doing so, however, I recognise that discerning particular moments of gatecrashing are difficult to do ‘in action’, but can only really be perceived (at least from a ‘participant observer’ position) after the fact.
Chapter Seven. Gatekeepers, guardians and gatecrashers: protocol enactment

Introduction

At the beginning of Chapter One I asked you to imagine a researcher within a university who would like to access Indigenous knowledge, but has to contend with a protocol established to protect Indigenous knowledge. The actor has before them a number of options. In this chapter, I return to this scenario to explore the ways that actors enact protocols. I suggest that actors enact protocols in ways that resemble gatekeeping, guardianship and gatecrashing. Through this typology I imply that actors are influenced both by the entities of the protocol assemblage, and by their own agency which is motivated by self-interest and altruism.

Through the fugal method, in this chapter I seek to undertake a counter point exposition and explore moments when actors enacted protocols to access and control the flow of knowledge based on: self-interest (gatekeeping); concern for the integrity of the knowledge and the actors’ relationships to ‘others’ (guardianship); and a belief that knowledge should be free, or practice of an actor who does not understand the protocol, or adequately classify the knowledge they are working with (gatecrashing) (Raven 2010). As I have argued elsewhere ‘these characters enact protocols in differing ways ranging from prescriptive devices, to tools for translating morality’ (Raven 2010:34). In doing so I argue that the modes of gatekeeping, guardianship and gatecrashing are dynamic rather than static.

This chapter relies on the use of term ‘gate’ to examine those moments where actors are faced with options regarding the control of knowledge, and in particular how to enact protocols in those moments. This chapter relies on the gate, because as Semino et al argue, ‘gates are familiar objects and the opening and closing of gates is a familiar activity. Hence a scenario involving gates can fairly easily be used to explain complex issues to non-experts, as well as experts’ (Semin, Deignan, and Littlemore 2013:45). There are, however, some conceptual difficulties with using the ‘gate’ as a metaphorical tool. A ‘gate’ infers that knowledge is ‘bounded’, or exists within a defined region with inflexible boundaries, where actors must pass through a ‘gated’ area to reach knowledge.
I use the ‘gate’ metaphor in a similar way to others to refer to moments in relationships and networks where an actor is faced with a decision regarding the control (or care) of knowledge (Lewin 1947; White 1964). As I suggested in Chapter Two, following Lewin (1947), understanding how gates function becomes equivalent to understanding the facts that influence the decision of actors.

**Gatekeepers: keepers and controllers of the ‘gates’**

Gatekeeping has nuanced applications in the field of Indigenous research (Commonwealth of Australia 1999b; Kavelin 2008; Swartz 2009). As discussed in Chapter Two, Kavelin used the notion of gatekeeping to position universities as ‘key points in the regulatory chain of appropriation’ who or what gets let ‘in’ and what stays ‘out’ (Kavelin 2008:38). Gatekeeping, as Kavelin suggests, includes two functions. It is a ‘primary institutional location’ through which knowledge flows from Indigenous communities to transnational corporations who appropriate the knowledge and transform it into commercially valuable products (Kavelin 2008:39). Gatekeeping is a ‘filtering mechanism’ for the ‘legitimation of particular types of knowledge systems’ (Kavelin 2008:39). Gatekeeping is also mode which actors themselves take on. As Corra and Willer suggest (Corra and Willer 2002), a gatekeeper is a ‘switchman’ who determines the benefits. Gatekeeping is a powerful position (Rosengren 1997), particularly when the gatekeeper is positioned within the organisation because they uphold the institutional power and organisational structure (Holmes 2007). Gatekeepers support the bureaucratic ‘machine’, and in this respect they operate and are motivated by self-interest.

I had not initially thought to consider actors in the DKCRC as gatekeepers of the IIPP until one DKCRC actor, Abby, expressed the following sentiments:

**Abby (quote 31)**

I think there’s been some changes in personalities in the DK-CRC itself, and that’s made room for me to develop better relationships with others within the DK-CRC. Cause I’ve felt there’s been a little *gatekeeping* to make sure that I didn’t get to know who else existed in the CRC. This is just my feeling and I think the *gatekeeping*’s gone, and I’ve been able to develop better relationships.
Abby’s sentiments reminded me of my attempts to gain access to the DKCRC premises when the CSIRO hosted it and while I was a PhD scholar on a DKCRC ‘top-up scholarship’ and the CSIRO classified me as a ‘visitor’, and I could only access the building if someone signed me in. This practice was not unique to the DKCRC or the CSIRO. Bureaucracies set rules and procedures in place to control access to buildings and information, and institute it through the use of keys and passwords. It is part of the rational order of organisations. Yet the idea that ‘gatekeeping’ was a process that, at least to this particular actor, was part of the social milieu of the DKCRC that highlighted a process that until their comments had remained invisible to me.

Abby’s sentiments indicated that a process of exclusion had occurred in the DKCRC but over time the gatekeeping had dissipated. Abby’s comment hinted that broader practices of gatekeeping may have existed in the DKCRC, and that these practices were dynamic rather than static. Abby was not saying that the IIPP was implicated in gatekeeping, but the comment prompted an arm of inquiry on whether this existed. In the DKCRC it appeared as though protocol enactment took on the characteristics of gatekeeping in two distinct ways. As discussed in Chapter Five, the IIPP included the ‘Indigenous intellectual property’ category as a type of knowledge. The next two sections chart how the ‘Indigenous intellectual property’ category acted as a rational classification for ‘filtering’ knowledge, which standardised the process of protocol enactment, and how DKCRC actors became the ‘switchman’ for this category.

**A rational category for filtering knowledge: ‘Indigenous IP’**

In the DKCRC, when presented with knowledge DKCRC actors were required to determine if the IIPP applied to it. I’d like to return to an example that I quoted in Chapter Five when I initially suggested that ‘Indigenous intellectual property’ was a category of knowledge in the IIPP. When I initially quoted ‘Anna’ (quote 16), I sought to highlight that while the IIPP included both ethics and IPRs as part of its assemblage, it gave limited attention to the later. Here, I’d like to draw out some other themes in Anna’s comment. Anna noted that the IIPP starts with a purpose and philosophy section, but then jumps straight down into the practices. Nowhere, as she notes, in the IIPP was there guidance or a definition on what constitutes IP, or that ‘Indigenous intellectual property’ warrants special attention.
Anna suggests that the IIPP was an ‘incomplete contract’ (Hart and Moore 1988, 1999; Williamson 1981) because there was information missing in the form of guidance on what constitutes IP and how this should be taken into account. As discussed in Chapter Two, incomplete contracts leave discretion to actors to a contract to deduce and negotiate the principles and clauses of the contract. Through the process of deduction some DKCRC actors considered that the knowledge they were presented with did not fit the category of ‘Indigenous intellectual property’. In those instances they perceived that the IIPP did not apply to their own research. The IIPP included within it the categories of ‘Intellectual property’ and ‘Indigenous intellectual property’ that, as the actor hints at, acted as a filtering mechanism for defining knowledge. This filtering formed part of the rational order in at least two ways. The category ‘Indigenous intellectual property’ acted as a ‘filter’ through which all knowledge was sifted. Anything that fell through would be categorised as ‘Indigenous intellectual property’, and anything that did not would be categorised as another form of knowledge. This process was a highly rational process because it used a standardised category against which all knowledge was compared. Additionally, the lack of specificity of what ‘Indigenous intellectual property’ was, may have caused vagueness in the IIPP that produced a space for self-interested opportunistic behaviour, which may have decreased the protective function of the IIPP (Cao and Lumineau 2015).

**Actors as the ‘switchman’: discerning what is IIP**

The gatekeeping mode includes the act of ‘filtering’ and the ‘switchman’ who makes the decision on what should be let in. Actors in the DKCRC played the role of the ‘switchman’ by determining what counts as ‘Indigenous intellectual property’ and what doesn’t. That is, all DKCRC actors were required to use the category ‘Indigenous intellectual property’ to filter knowledge. As Amanda suggests, in the absence of clear definitions and understandings of indigenous knowledge (or ‘Indigenous intellectual property’ rights in this case) researchers decide whether the information they are accessing (or attempting to access) constitutes Indigenous knowledge. The actor has discretion to decide whether the information constitutes ‘Indigenous intellectual property.’ This act of filtering is akin to gatekeeping.

Many theories in media and communication ‘grasped the role of the gatekeeper as an individual who selects information, message and items and has discretion to decide what
Gatekeeping is a boundary-making activity that occurs more broadly across and within organisations whereby a person acts as a ‘switchman’ to engage in a process of ‘filtering’. Gatekeeping, suggests Holmes, includes practices where an actor ‘in the position of power takes initiatives to open gates, and even prods the subordinate in the direction of movement over hurdles’ (Holmes 2007:195). Lastly, as Holmes argues, gatekeeping includes who is ‘inside’ or ‘outside’ of an organisation, or can become a member of a particular group. Holmes proposal to stretch the boundary creates confusing definitions of ‘gatekeeping’. Rather than stretching the definitional boundary of gatekeeping, other concepts such as ‘guardian’ or ‘steward’ can easily accommodate actions of supporting access.

Guardians: stewards of the knowledge ‘gates’

Guardianship and stewardship, as discussed in Chapter Two, are often considered to underpin Indigenous notions of ‘protection’ and ‘ownership’ of knowledge (Rosengren 1997:4). Stewardship theory, as discussed in Chapter Two, provides a counter-position to agency theory and argues that actors act out of the interest for ‘others’ rather than self-interest, and behave in a collectivistic manner based on ‘intrinsic motivation’ (Argumedo et al. 2011; Lai 2014; Lotz 2002). This is the playing out of relational ordering.

At the very beginning of my research relationship with the DKCRC I found myself in a unique situation. As an Indigenous researcher I am conscious of the position I place myself, and the position others place me in research. It is an ordering that I had not really considered more deeply than along racial lines. Yet an encounter with another DKCRC actor revealed the relational order that exists in research that cuts across, and through racial divisions.
Early on in the research with the DKCRC, I was on a lunch break and standing under a tree outside the newly constructed building. I got talking with some of the local Aboriginal women, who were also at the workshop. After I told them that I was from Western Australia, one of the women asked me ‘why aren’t you working with your own mob?’ I had expected that Aboriginal people at the DKCRC would think this, and possibly ask it. I provide this short story to highlight a few aspects that emerged as I contemplated and reflected on this encounter, and which provides the basis for this section and the subsequent section.

The Aboriginal woman’s question indicates a pre-existing set of protocols that stipulate that we have obligations and responsibilities to our own family, country and knowledge. It made me aware of the inter-play of protocols, which occurred in the research. This encounter also suggested that we have responsibilities to act in the interests of the group or others no matter where we are in space or place. This encounter suggested that protocols themselves are enacted as something akin to a steward or guardian.

On being presented with the IIPP, DKCRC actors are faced with a dilemma on how to interact with it and how to enact it. In comparing it with their own experiences of working with Aboriginal people (and their knowledge) their own ethical values surface, some actors are compelled to enact protocols through relational ordering. Within research, actors circumvent, subvert or sidestep protocols, and when they do it is not always transparent or even malicious. This section draws on the notions of ‘guardian’ and ‘stewardship’ to explore relational order in the enactment of protocols in cooperative research networks.

Using Davis et al. framework for understanding stewardship (Davis, Schoorman, and Donaldson 1997), the next two sections discuss the influence of psychological factors (motivation, identification, use of power) and situational factors (management philosophies, culture, power distance of the DKCRC and requirements for research ethics) in the enactment of the IIPP.

**Psychological factors: ‘Uncomfortable’ feelings and incongruences**

On the surface, the act of sidestepping may indicate that the DKCRC actors have a disregard for protocols and are acting in self-interest. Actors who sidestep protocols
however, may be acting in the interest of the collective or group, and enacting stewardship behaviour. Throughout my encounters with DKCRC actors many people critiqued the protocol, but few challenged how the IIPP operated to the extent of challenging/circumventing it to modify it. One actor, however, did. I return again to Jody’s story (quote 20), that I presented in Chapter Five, to explore the translation of protocols from one cultural context into another and its implication for procedural ethics and ethics in practice. I return to this story in this chapter because it encapsulates how actors can, even when presented with protocols that institute rational order, still seek, through their own ethical framing and feelings, to engage relational order in the enactment of protocols. Jody, when presented with the IIPP chose to change how it was rationally enacted so that it was able to meet the Indigenous ethics that she had experienced. Through conversations with communities, the Indigenous concept of Ngapatji-Ngapatji was used to allow for a fifty-fifty split in the ownership of IP. Jody’s practices suggests that rather than engage with organisations as bureaucratic ‘machines’ — and rationally follow rules; actors may engage with organisations as an ‘ensemble’ — where their performance is negotiated.

Stewards are guided by intrinsic motivation, identification with the organisation or group they work with, and the use of personal power (Davis, Schoorman, and Donaldson 1997). It is possible to see all of these factors in the story just recounted. The actor indicated that they felt ‘uncomfortable’ that the IIPP stipulated that all new IP was owned by Ninti One, especially in the context where ‘Aboriginal people were sharing their own traditional knowledge.’ Jody’s identification with the Aboriginal people they were working with, the DKCRC and their own organisation is evident through both the desire to make a fifty-fifty split in new intellectual property, and through adopting an Aboriginal term – Ngapatji-Ngapatji – to encapsulate and explain this idea.

Jody’s approach to establish Ngapatji-Ngapatji, as the basis for benefit-sharing, was an attempt to overcome the incongruences between the rational order imposed by the IIPP, and the relational order that emerged through working with Aboriginal people. They were intrinsically motivated to overcome the incongruity. Behaviours that aim to ‘conquer the challenge or reduce the incongruity’ in a situation are defined, as Deci argues, ‘intrinsic motivation’ (Deci 1975:132).
The agreement carved out by this actor, as I have already mentioned, was something that I did not witness elsewhere in the DKCRC. This actor engaged both institutional and personal powers. As Davis et al. argue:

*Personal power, an inherent part of the individual in the context of the interpersonal relationship, is not affected by position. Expert and referent power are characterized as personal power; referent power works through identification of one person with another person. Personal power is developed over time in the context of the relationship and is not affected by the formal roles in the organization. Although slower to develop, personal power can be sustained over longer periods of time* (Davis, Schoorman, and Donaldson 1997:31).

I take a slightly different approach to Davis et al. on this point. It seems, at least in this example that personal power and power afforded to the formal roles in organisations interact simultaneously. It was because of their position within both their own parent organisation and the DKCRC that Jody was able to push for such changes. However, if it were that easy to make changes to the agreement, which potentially influences how the IIPP may be interpreted, why then did more people not do this? In this instance, it appears as though the actor utilised personal power that they had built in their relationships with all partners privy to the negotiations.

I’d like to return again to a part of Julianne’s story (quote 26), that I presented in the previous chapter to explore procedural ethics and ethics in practice. Julianne (quote 26) suggests that ‘to actually work respectfully and develop good relationships you need to actually carry’ protocols, ‘have your own protocols’ and ‘enacting change as you go along’. Julianne suggests that there are other protocols that guide, or ought to guide researcher behaviour. The protocols are a ‘guideline for yourself, of acceptable and unacceptable practice.’ As the Julianne suggests, the established bureaucratic protocols – such as the IIPP, and the Central Land Council protocols – are an important part of the landscape which researchers need to be aware of, but to ensure respectful behaviour, an internalised, embodied and reflexive approach is needed. This actor, rather than seek to engage in a process of changing or altering the existing rational order, as the previous actor had, chose to enact a relational order that matched their own set of ethical values.
This suggests that relational order for some actors is the guiding order of research. Rational order, as set out in the ‘body of protocols’ is relevant, but is not the overriding order that influences researchers enactment of protocols. A pre-existing, or developing set of protocols influences the enactment (or non-enactment) of rational order.

The act of sidestepping bureaucratic protocols is problematic for organisations. It is particularly so in systems where new public management has taken hold, and where the tick-a-box approach to accountability has the potential to classify this type of behaviour as non-compliance. Rather than rely on the notion of ‘Indigenous intellectual property’, these actors placed greater importance on the notion of ‘traditional knowledge’ or ‘Indigenous knowledge’ and the pre-existing relational order associated with it.

As discussed in Chapter Four, the IIPP is deeply embedded within the rational order of the DKCRC through its mention in the skeleton of agreements (e.g. Commonwealth Agreement, Centre Agreement, Partner Agreements and Student Agreements). When there are clear benefits to sidestepping protocols, at least in the case of the first example, how should actors in a rational system interpret this sidestepping? If, for example, a student sidesteps the IIPP, are they in breach of their Student Agreement? How does, or should, this sidestepping get translated into the mechanisms that report on compliance of protocols?

**Situational factors: becoming ‘stewards’ through rational order**

Management philosophies of the DKCRC and research institutes more generally are influenced by an agent-principal view of actors (Alchian and Demertz 1972; Jensen and Meckling 1976; Spremann 1987). However, research institutes have introduced processes that attempt to change actors from agents to stewards (Davis, Schoorman, and Donaldson 1997). Processes such as human research ethics clearances were established by the desire to allow researchers to operate autonomously, while needing to reduce the risk of self-interested behaviour that may not only be unethical, but also detrimental to their brand.

Many DKCRC actors became ‘stewards’ not necessarily because of intrinsic motivation, but because of situational factors such as the IIPP directing them to submit their project proposals for ethics review. In this section I use four excerpts from interviews with
DKCRC actors to explore how the necessity to sign an agreement stipulating that they have read the DKCRC IIPP, and the requirement to submit their research proposals to an ethics research committee constitutes protocol enactment through stewardship. This kind of stewardship is strongly aligned to the rational order that stipulates the requirements for actors to follow rules and procedures established by the existing bureaucracy.

Anna (quote 32)

So ethics were around that individual informed consent in those circumstances, and the requirement on the researchers to meet the expectations of the Indigenous IP Protocol was what was directing people to ethics [...] Because, yeah I think that's right. How a lot of the people were coming across ethics for the first time. Because the Indigenous IP protocol said you know you have to comply with ethics requirements.

Justin (quote 33)

Justin: I think initially I read it. It's been quite some time. I've largely followed the university and central Australia ethical process.

Interviewer: Okay, and why have you chosen to follow that particular path?

Justin: Well they're because they're the space in the institutions in which I currently work. So um the process is there for me, and I can then get on with the research and let someone else administer that.

Paul (quote 34)

Paul: The protocols that we followed were the CDU [Charles Darwin University] ethical guidelines. We had to do a lot of work to get those clear. So we were working under those ethical guidelines of the CLC [Central Land Council] guidelines that you can just get off the net.

Interviewer: The protocol or guidelines?

Paul: Um the protocols, and on top of that just the knowledge that we have from our schools in what it sees at ethical research [...]. There was nothing from Desert Knowledge that I was aware of at the time, so I just used those.

Brandon (quote 35)

Interviewer: information regarding the project, and the information collected. What happens to that? Where does it go?
Brandon: because the actual researchers, the primary data, I’m going to have to answer your the question in a number of ways because it is complicated. The primary data will be held by the researchers - who will be bound by the ethical guidelines of their prospective universities. But then the researchers are then – this is another area where I’m respecting their autonomy and their ethical professionalism I guess – although that’s kinda forced on them as well. I mean I know that is forced on them by their universities, and I will ask them to give me the ethical clearance numbers. But then what they have to give me, they have to write a report which addresses the research questions.

As Anna (quote 32) indicates, the IIPP guided DKCRC actors to comply with formal/procedural research ethics. For some actors, particularly early career researchers and those who had previously undertaken much of their work in the ‘physical sciences’, the requirement to submit their research for ethics clearance was a new dimension to research. Both Justin (quote 33) and Paul’s (quote 34) use of the IIPP was not explicitly stated or even known, yet through their own organisation’s requirement to submit their research to an ethics committee, they unknowingly enacted the IIPP (in particular clause one).

Some DKCRC actors, such as Paul (quote 34), may willingly seek to engage other protocols (where they exist) and other ethics processes. Yet, as Brandon (quote 35) suggests, for some DKCRC actors this is ‘forced on them by their universities’. It is not something that all actors would necessarily willingly submit their research through if they had the choice. By submitting a research proposal for ethics clearance actors are required to place themselves in relation to the people they seek to work with. The rational order requires that they behave, at least on paper, as a steward who is motivated to consider the needs of others. They are required, under the national guidelines, to explain how they will use and store the information, and how the research will benefit the participants (AIATSIS 2000, 2012; Commonwealth of Australia 2003). In doing so the actors, including the DKCRC itself, enacted the fourth clause of the IIPP.

There is a real tension between researchers’ autonomy and the need of bureaucracies to ensure ethical research practices. This is a tension between perceiving actors in a steward-principal relationship and an agency-principal relationship. The two are not mutually exclusive. Actors, when engaged in research, feel this tension. As Olivia, a DKCRC actor, expressed:
Olivia (quote 36)

It does put more restrictions on how you can use information and knowledge, and I tend to think that that sort of responsibility is something that we need to develop within ourselves, and not have governed by other bodies. But I also respect the fact that indigenous knowledge is sacred to, or a lot of it is sacred to a lot of situations and held by certain people. So I would certainly want to think that there was some sort of protection on that, and that researchers couldn't just go in and use it the wrong way unknowingly.

Olivia recognises the need for a personal ethics of responsibility, but suggests a mechanism ought to be in place to protect Indigenous knowledge. The co-existence of actors as both agents and steward was instituted through the IIPP. That is, the DKCRC used the IIPP as a rational tool to institute stewardship behaviour.

Gatecrashers: sidestepping and ‘moving on’ from the ‘gates’

From the first encounter outlined in the previous section, I felt that I was not upholding my own obligations to my own mob, and that I was also intruding, in someway, on someone’s country and into someone else’s knowledge. It was not the first time I’d had this feeling. Prior to the development of the Desert Knowledge Precinct, when the DKCRC was temporality housed within the CSIRO, in attempting to gain access to the building I was reminded that, despite being a DKCRC actor, I was still, at least where the CSIRO bureaucracy was concerned, an ‘outsider.’ But rather than leave, or consider myself as an ‘outsider’ I chose to stay to see if I could explore the relationships that existed and how protocols work in establishing collaborative research between Aboriginal groups and between Aboriginal and non-Aboriginal groups.

Unlike the world of computer networks, where it can be quite clear when protocols have been transgressed, it is not always transparent in research when this has occurred. Determining whether protocols have been sidestepped can only really be discerned through conversations with those to whom the protocols apply. Take for example the comment below that I heard early in my interactions with Desert Knowledge actors.

‘Take a good look at it because you won’t see it again’.

This comment is taken from a story that was told to me second hand through a DKCRC actor. A traditional owner of country where the Desert Knowledge Precinct
currently sits supposedly said this at a time when negotiations were underway to find a location to house the Desert Knowledge Precinct. It seems that the traditional owner was reminding those present that the area in which they were standing would not be the same after the construction of the Desert Knowledge Precinct. The very act of establishing the precinct to explore ‘desert knowledge’ would fundamentally change the place in which the precinct was located. Once the precinct had been built then the place would be forever changed or cease to exist as it once did, and with that change perhaps also the relationships and ‘desert knowledge’ associated with that place. I don’t know if this comment was actually said, and I never sought to verify it; however the comment has stayed with me throughout my interactions with the DKCRC and influenced my reflections on the enactment of protocols.

When I heard this I wondered if the person was making an attempt to expose the existing lines of responsibility and obligation that still existed, and through which they were obliged to speak. Was this person trying to expose the ‘gatecrashing’ that was occurring? Was it an attempt to indicate, in the midst of the development agenda, for an area of land dedicated to building ‘desert knowledge,’ that protocols were being transgressed? While not explicitly concerned with the DKCRC IIPP, this comment highlights that sidestepping protocols surfaced in multiple ways through the DKCRC. As discussed in the previous section, researchers sidestepped protocols to establish a process that reflected the ethical values and criteria of their research. This section considers another instance in which the IIPP was sidestepped - when indigenous knowledge (and the control mechanisms attached to it) is not perceived. I return here to a follow up on comments made by Anna (quote 16) in the gatekeeping section of this chapter to explore this instance. Anna (quote 16) suggested that the IIPP excludes information on what ‘Indigenous intellectual property’ is and how it ought to be handled in research practices. When faced with how to interpret this category, and whether it applied to them Anna went on to suggest:

Anna (quote 37)

I guess to my mind most researchers looking at that would have stumbled at that point and said ‘oh well there’s no IP’ and just moved on.

As discussed in the previous section, actors in the DKCRC utilised rational order — through application to a university ethics committee to gain ethical approval to
undertake research in the desert regions of Australia. In the process of applying for ethics, some actors were unable to identify either IP or Indigenous knowledge in their research proposals. It is difficult for actors to define Indigenous knowledge and ‘Indigenous intellectual property’ because these categories become entangled in discourses of IPRs, and other mechanisms within bureaucracies, such as organisational narratives and branding. Difficulties in defining these categories then make it easier for actors to transgress protocols. If there is no fixed definition then an actor can conceivably make up their own definition that allows them to access knowledge without following the protocol.

The inability, or the lack of desire, to see or define Indigenous knowledge, ‘Indigenous intellectual property’ and the rules established to control access to them, continues to occur in research. As Isabelle, a DKCRC actor said:

*Isabelle (quote 38)*

> From my perspective is that it [the protocol] is to protect people from that constant state of rip-off that happens. And I still think it has a long way to go. Researchers still don't have, and I'm not saying our researchers, but researchers in general, I think our researchers are [pretty good]. I still don't think that researchers understand that they don't have a right to take somebody else's knowledge and use it in a form, whether it is now or years to come, without their permission, concurrence [or] agreement [...]. I don't know. I think people see information generally, or as indigenous information, as there to be taken and used in a way that they think.

Protocols are in place to stop the ‘rip-off’ of indigenous knowledge, and yet as Isabelle suggests the idea that information is something that exists without property rights (or ought to exist without property rights) still endures in research. The establishment of the DKCRC IIPP, and indeed indigenous research ethics, is testament to this. This type of action is similar to a ‘hacker’ whose ‘hacker ethic’ includes an ethical stance that ‘all information should be free’ (Coleman and Golub 2008). And as Halbert argues, ‘hackers prioritize freedom of information and are suspicious of centralized control. Private ownership of information is considered illegitimate’ (Coleman and Golub 2008) (Halbert 1997:363). It is part of a broader discourse that critiques the use of mechanisms such as intellectual property rights, software, and digital fences to control access to information and the impact of these on the enclosure of the public domain (Boyle 2003).
However, the transgression of protocols is not just the consequence of a discourse of open-source or free information. Where Indigenous knowledge and protocols are a subject of inquiry, actors are influenced by the discourse of the ‘age of discovery’ (Donoghue and Alverson 2000) and colonisation (Howitt, Havnen, and Veland 2012; Rigney 2001; Suchet 2002; Waller 2010). The desire to collect information for science and the colonial imaginings of Indigenous peoples rendered invisible Indigenous peoples’ property rights to knowledge. The collection, or ‘theft’ of Indigenous knowledge is akin to what Shiva called ‘biopiracy’ (Shiva 1997).

Yet, establishing protocols is not just to stop the ‘theft’, but as Peter suggests, they also assist with thinking through some of the ethical aspects of placing undue burden on one particular community, or for stopping gatecrashers.

Peter (quote 39)

These protocols are very relevant for interacting with places, people, communities — call them whatever you want — which are not necessarily easy to approach, and who are burdened by people trying to research them. And one of the senses that I had as well was that it was very useful and important for the CRC in the early days to say we need to coordinate that. We don’t want researchers rushing everywhere all of us to the same places, putting pressure on the same people. And you know, usually people find... And having these people overwhelmed and overburdened. At the same time, you know there needs to be some flexibility with CRC and its role by saying you can’t go. It needs to be done in that way.

One of the difficulties with studying protocol enactment is that protocols are not just abstract; researchers enact them through relationships. Discerning when actors sidestep protocols requires examining how individuals enact the protocol, and the strength of the relationships through which they were enacted and how power operates through them. It was the gradual realisation of this principle that made me wonder whether the person who said ‘take a good look at it because you won’t see it again’ was attempting to highlight an imbalance in power through which the location for the development of the Desert Knowledge Precinct was negotiated.

I did not fully understand this principle — protocols exist in negotiated relationships or as a social contract — and the implications on the method of inquiry until after I had left the field and the DKCRC had ceased to operate. Asking one actor, such as a university-based researcher, if they had enacted the protocol — and not the actors
whose knowledge the protocol protected, is a fundamental flaw of this thesis. Since I discussed this at the outset of the thesis, I will not go into further detail here. It’s also flawed because very few actors, I believe, who are bound to the IIPP and university ethics, would be likely to admit to not using the protocol if they hadn’t used another protocol. To do so would be to admit a transgression of protocols and place their own research in jeopardy, and destined to join stories such as Margaret Mead’s (Foerstel and Gilliam 1992), and those discoveries labelled as ‘biopiracy’ (Shiva 1997). However, if I had pushed further and engaged with Aboriginal communities in the desert regions of Australia, I can only guess that there is a possibility that some Aboriginal actors may have indicated that gatecrashing had occurred, and some that there had been robust trustful relationships.

The idea that protocols exist in negotiated relationships or as a social contract raises an important question of how to gather information for accountability on the enactment of protocols, or research ethics for that matter. Within the DKCRC, an accounting mechanism was in place to check to ethics approval. As Anna said:

**Anna (quote 40)**

> And how it's managed within the CRC? Well projects tend to have requirements on them at the first milestone for the ethics approval. So that's the check that it's happening, but um <pause>. Oh yeah and in every milestone report project leaders are asked to raise any ethics issues that have come up. Um that is really the only check on whether ethical practice is being followed.

How can research organisations and university ethics committees make informed judgments on the enactment of protocols and research ethics when they receive only one side of the story? Without recourse to a university ethics committee, how is it possible to discern when actors sidestep protocols and whether this is for benevolent reasons such as stewardship, or malicious reasons such as gatecrashing? The network of DKCRC agreements only stipulates that actors must have read the DKCRC IIPP. It was difficult to discern what structures within the DKCRC, aside from the DKCRC Board’s Indigenous Ethics Committee, were supposed to oversee how, and whether, actors enacted the IIPP.

Before explaining how each of these different positions — gatekeeping, guardianship and gatecrashing — is related I’d like to briefly highlight one more example that could
be constituted as gatecrashing. The DKCRC, like other research organisations, engaged in ‘contract research’.

DKCRC ‘contract research’ was research that was ‘financed by external sources’, and was commissioned on a fee-for-service basis, won through competitive tendering, or received in the form of grants (Desert Knowledge CRC 2007:14). The relationship between the IIPP and DKCRC ‘contract research’ was ambiguous. As Rachael, a DKCRC actor, said:

**Rachael (quote 41)**

The IIPP does not relate [to the contract research] cause it is superseded by the contract. DKCRC has a policy about the ethical use of Indigenous IP, and then you have an overarching contract says that all material vests with the government. I don’t know where that leaves us. It is an area that needs looking at. It is a difficult thing to get around.

The existence of ‘contract research’ in the DKCRC suggests that the IIPP had limited power to control research that went beyond the legally constituted DKCRC partners.

**Dynamic moral positions**

Gatekeepers, guardians and gatecrashers may be considered as distinct ethical positions, but it is perhaps more useful to consider them as modes through which actors move or employ in research when enacting protocols. Others have explored the idea that it is possible to characterise the practices that actors enact as dynamic positions. Stirrat, for example, in a discussion of the mercenaries, missionaries and misfits tripartite characterisation in the development business (associated with poverty alleviation) sought to:

> to use these stereotypes as an entry-point for exploring the tensions and contradictions in ways in which people working in the industry view themselves and others. While there are individuals who can be recognized as approximating to each of the three stereotypes, in general people veer between them, at different points in their careers and even at different points on the same day! Finally, although these three characterizations – missionary, mercenary and misfit – appear to be contrasting, this article will argue that they are in fact variations on a common theme and a modern version of what people in the industry tend to see as the new ‘white man’s burden’ (Stirrat 2008:407).
The typology that I’ve established in some ways resembles Stirrat’s stereotypes of mercenaries, missionaries and misfits. Gatekeepers, like mercenaries, are motivated by self-interest. Guardians and missionaries are both motivated by altruism, or as Stirrat argues, missionaries are motivated by the ‘sacrifice of the self in pursuit of some greater goal’ (Stirrat 2008:412). Drawing parallel comparisons between gatecrashers and misfits is a little harder to make. Stirrat argues that misfits work in the development business because they are misfits in their own country, they are nostalgic for a different type of world with ‘real people’ (people from the glorified rural society), and to be on the ‘frontier’ — ‘in new pristine areas ripe for the developers’ (Stirrat 2008:419). While the gatecrashers I have posited in this chapter may have similar motivations to Stirrat’s misfits, it is not something that I was able to determine from the interviews or participant observation. The typology that I have built in this chapter also suggests, like Stirrat, that actors move between these modes at different points in their career and even during the day. The key difference between Stirrat’s tripartite characterisation and the typology I present is that while Stirrat focuses on the development industry, my focus is on the research industry and, in particular, enactment of protocols to protect Indigenous knowledge and how protocols order this practice. Further similarities may be drawn, however, it is the beyond the scope of this thesis to compare the characterisation of actors in the development industry and the research industry.

Brandenburger and Nalebuff, for example, in discussing the multiple roles that people play in business argue that:

People play many parts in the game of business. That makes the game a lot more complicated. Sometimes you see someone occupying one role and forget to ask what other roles that person plays [...].

People are so accustomed to viewing the business world in warlike terms that even when other players are both competitors and complementors, they tend to see them as only competitors and fight against them. They focus on the evil Mr Hyde and overlook the good Dr Jekyll (Brandenburger and Nalebuff 1996:27).

The later part of the quote highlights what, I think, often happens in Indigenous research. There is a tendency to focus on either the Mr Hyde’s or Dr Jekyll’s. There is
also an assumption that the Mr Hyde’s and Dr Jekyll’s are different actors, rather than
the same actor playing different roles. In this chapter, I argue that actors move between
the roles of gatekeeping, guarding, and gatecrashing. The decision to enact a particular
mode, such as gatekeeping, is less a choice and more an act of being a part of the
bureaucratic ‘machine’. In other instances, such as guardianship, actors may choose this
mode to become part of the organisational ‘ensemble’.

Malekoff, for example, explored the idea that the actors move between gatekeeper and
gatecrasher modes. In the context of working with children, Malekoff suggested that
‘…today’s gate-keeper is likely to become tomorrow’s gatecrasher if you do not carefully
cultivate a relationship with them’ (Malekoff 2009:201). He argued that ‘gatekeepers
and gatecrashers are not always external forces; often they reside within us’ (Malekoff
2009:201). The internalisation of each of these roles certainly appeared in the enactment
of the DKCRC IIPP. This section argues that the actors move through the roles of
gatekeeper, guardian and gatecrasher as they enact protocols for protecting indigenous
knowledge.

Gatekeepers, guardians and gatecrashers are modes that actors enact consciously or
unconsciously in the existence of space-place tensions through the studying, defining,
storage, use and sharing of knowledge. While there is a tendency to categorize particular
actors as gatekeepers (States), guardians (Indigenous peoples) and gatecrashers
(researchers), the reality is that these modes are not discrete and static. As the roles of
actors change through time and space-place so does the labels. The label given or
acquired can, and does, change. They change through the influences of social structures
and processes. They are also dependent upon a person’s position/s (i.e researcher,
Indigenous, government worker) and on their relationship to the knowledge. It is also
dependent upon the rules and protocols that govern this relationship, and how far and
to what means these rules and protocols are used and respected. It is also dependent on
the power and validity of the boundaries and role given to entities (such as individuals
and organisations).

The DKCRC, as an organisational entity, can be positioned in each of the roles of
gatekeeping, guardian, and gatecrashing. For example, the IIPP is ‘managed and
developed under the guidance of the Board’s Intellectual Property and Ethics
Committee’ (Malekoff 2009:198). This includes, as stipulated in Clause 8 of the IIPP, the ‘continual improvement’ though taking advice from indigenous stakeholders and research with the CRC to enable the development of ‘ethical standards for defining and handling Indigenous IP, and for improving the ways in which the formal methods interacts with local indigenous knowledge’ (Desert Knowledge CRC 2004:13). In its role the Board maintains control over, at least at the organisational level, defining the category ‘Indigenous intellectual property’. This category is then utilised as a filter to discern what ought to be considered as ‘Indigenous intellectual property’ and subject to the IIPP. The Board thus becomes the ‘switchman’ for discerning which agenda items they should talk to, and which agenda items the full Board or its other standing committee should take up. The Board establishes the rational order through which gatekeeping of the protocol is enacted at the organisational level.

But let’s take a step back to just prior to the establishment of the DKCRC. As discussed in Chapter Four, the IIPP was set up as part of the bid to establish the Desert Knowledge CRC. From discussion amongst stakeholders, including Aboriginal people in the desert regions, there was real concern that this research could perpetuate some of the historical injustices of research with Indigenous people. That there was a perceived and real risk of Aboriginal people’s knowledge being accessed and used without their consent, and that Aboriginal people would not accrue benefits of research that used their knowledge. Those engaged in these initial discussions saw the incongruences of research practices which ‘ripped-off’ Indigenous peoples, and the renewed call for respect of indigenous protocols and accountability of researchers through research ethics (Desert Knowledge CRC 2003:2). Those who were successful in their bid to establish the DKCRC, and those who subsequently joined the DKCRC (either as staff, Board members or researchers) were intrinsically motivated to ensure that this did not occur again, at least within the DKCRC network. In putting the IIPP as part of the initial CRC bid, and tying it to the organisational structure of the DKCRC and formal research ethics, the DKCRC enacted the protocol as a ‘steward’. It embedded the relational order, of respecting Indigenous peoples, into the rational order of the organisation.

Now let us consider enactment from an ‘outsider’ perspective. If in the course of their research and work a DKCRC researcher or staff member failed to enact the IIPP, the
DKCRC could have been placed in a position of ‘gatecrashing’. While the individual may have been judged for their actions, there was a real risk that this judgement would extend also to the broader DKCRC. Perhaps in part because of this risk and the possible damage it could do to the DKCRC brand; the DKCRC established an IP and ethics register to account for who had submitted an ethics application (AIATSIS 2000; Brush and Stabinsky 1996; Martin 2003; Menzies 2001; Smith 1999).

Conclusion

In Chapters Five and Six I mapped the IIPP assemblage and its three broad functions as a set of rules of engagement, assigning property rights, and contributing to broader benefits for Indigenous people. Through reliance on the fugual method, as outlined in Chapter One, this chapter revisits the ‘first voice’ perspectives raised in Chapters Five and Six and digs a little deeper to provide a ‘second voice’ response to consider in more detail protocol enactment as influenced both by rational and relational order.

This chapter focused on the stories that actors told about their own use (or non-use) of the DKCRC IIPP, and my own experiences and observations of the DKCRC. This chapter recognises that ‘order in organizational life comes just as much from the subtle, the small, the relational, the oral, the particular, and the momentary as it does from the conspicuous, the large, the substantive, the written, the general, and the sustained’ (Weick, Sutcliffe, and Obstfeld 2005:410). It supports the basis of practice theory which argues that social order cannot be understood without understanding the role of agency in producing them, or that agency should be understood as being ‘configured by structural conditions’ (Feldman and Orlikowski 2011:1242).

This chapter explored the differing ways in which actors enacted IIPP within the DKCRC. In this chapter I argued that the IIPP forms the basis of a rational category — ‘Indigenous intellectual property’ — for filtering knowledge, and that DKCRC actors become the ‘switchman’ for discerning whether something fits this category. The act of filtering knowledge in this way is akin to the role of gatekeeping used in media organisations to decide which articles they should published, and which ones to discard.

Actors also enact protocols in a manner that is akin to guardianship or stewardship, through both relational and rational order. Firstly, actors enact protocols relationally as
guardians through establishing a process, or processes, that build on the principles of the protocols. When intrinsically motivated, and where there is a desire to ensure ethical research practices, I argued that sidestepping actions of actors ought to be considered as guardianship. Secondly, actors enact protocols rationally as guardians through engaging in research ethics. In this context I argued that situational factors embedded in rational order, such as the requirement to submit to ethics research practices, or signing an agreement, could also be considered as enacting protocols as guardians.

Actors also, as I have attempted to illustrate in this chapter, enact protocols through gatecrashing. They do this when they sidestep protocols because they do not discern ‘Indigenous intellectual property’ — and hence the protocol established to protect that category. Gatecrashing is an extension of the ideas that information and knowledge should be free. In Indigenous research gatecrashing may be informed and influenced by colonial discourses and practices that did not respect or acknowledge that Indigenous peoples have pre-existing property right regimes that control the ownership and flow of their own knowledge.

Actors enact protocols through gatekeeping, guardianship and gatecrasher modes, which are dynamic positions that actors can move between. Protocol enactment through these modes can apply across scales. The DKCRC Board, for example, enacted the protocol through gatekeeping by establishing and providing oversight of the ‘Indigenous intellectual property’ category. The DKCRC enacted the IIPP through guardianship characteristics by providing a research environment that sought to overcome unauthorized access and use of indigenous knowledge, and supported the growing requirements for formalized ethics. The DKCRC’s establishment of an IP and ethics register suggests, in part, a desire to reduce the potential risk of ‘gatecrashing’.

The next chapter explores how protocols become entangled in other organisational mechanisms. In particular, it explores the complexity of defining Indigenous knowledge and ‘Indigenous intellectual property’ — categories in the IIPP — when they become entangled in the branding of ‘desert knowledge’ and ‘The Desert Knowledge Story’. Through the following chapter I seek to highlight the ways that branding and an organisational narrative subsumes these categories into a broader notion of ‘desert knowledge’. ‘Desert knowledge’ subsumes ‘Indigenous intellectual property’ and
Chapter Seven

Indigenous knowledge. This hierarchy of knowledge make it difficult to position the protocol as protecting Indigenous knowledge a supposed legitimate category of knowledge in its own right.
Chapter Eight. The Desert Knowledge Story & the brand: protocol entanglement

Introduction

In Chapter Three I asked you, as a way to consider assemblage thought and entanglement, to consider Deleuze and Guattari’s example of the orchid and the wasp (Deleuze and Guattari 1987). I’d like to take a slightly different tack in beginning of this chapter to explore and explain entanglement. Consider that you have put two balls of wool into a basket in Room A (the lounge room). Sometime later you come back to the basket to retrieve the two balls of wool to find that they have become tangled together. They have become knotted to each other. After some time you are able to separate them and have two balls of wool again. You leave one ball of wool in Room A, and the other you take to Room B (the kitchen) and begin to knit a sock out of it. The wool in Room A remains the same, a ball of wool. It is not impacted by the changes to the wool in Room B. Now consider a different scenario. You take one of the balls of wool into Room B, as in the previous scenario, while leaving the second ball of wool in Room A. You knit a sock with the wool in Room B, yet in the second scenario, when you return to Room A, the ball of wool also resembles a knitted sock like the one you knitted in Room B.

In this chapter I argue that bureaucratic protocols in research networks become entangled with other ‘things’ in similar ways to the two scenarios above. The first form of entanglement is a fleeting entanglement whereby impact diminishes with distance. The second form of entanglement outlined above borrows from quantum mechanics (Humphreys 1997; Hüttemann 2005; McKelvey 2002). It is a useful form of entanglement to explore because it highlights the spatial aspects of protocol entanglement, which can unintentionally re-place the meaning and concepts embodied in protocols, and to a certain extent undo the aim or intent of the protocol. This chapter focuses on the entanglement of the IIPP with ‘The Desert Knowledge Story’ and the ‘desert knowledge’ brand which were tools used by the DKCRC to tell a story that justified its existence and marked and marketed the knowledge that is both sought to access and produce.
‘Desert knowledge’ brand: branding knowledge & place

Branding in organisations can influence the placement and interpretation of protocols. Branding places with particular images, ideas, passions or visions assists with creating competitive advantage for tourism, service delivery and other consumptive activities. The process of branding places derives from corporate branding strategies. Place branding, as Pasquinelli (Pasquinelli 2011) argues, is related to notions of entrepreneurial governance, which is characterised by management, promotion, risk and profit motivation. It pushes public authorities to adopt the characteristics of management, promotion, risk and profit motivation attitudes to local and regional development. As (Pasquinelli 2011:1) argues, ‘regions and cities have to construct their own competitive advantage in order to position themselves in a ‘market of geographies’, and open inter-territorial competition space where new development opportunities might spill out.’ Applying corporate branding to places ‘demands associating the place with ‘stories’ about the place not by simply adding them next to the name or trying to imply them by isolating beautiful images of the place. The ‘stories’ need to be built in the place, not least by planning and design interventions, infrastructure development and the organisational structure and only afterwards, they can and need to be communicated through the general attitude of place, and finally through promotional activities’ (Kavaratzis 2005:336). Branding the desert provided powerful ways to define not just desert knowledge but knowledge more generally in a geographical fashion, and deserts according to social criteria.

Figure 6 A DKCRC Branded Product
Through its range of notepads, sticky notes, water bottle, key ring holder, lip balm, hats, bags, and shirts, ‘desert knowledge’ became a powerful branding tool for the DKCRC, the desert and the knowledge it ‘contained’. The ‘desert knowledge’ brand was based on slogans such as, ‘Linking Desert Australians, Finding Desert Solutions’, and ‘Desert Knowledge is the unique knowledge we have about living well in the desert’ (Figure 6). The DKCRC brand symbol looked like a ying-yang symbol that was modified to represent the desert regions of Australia with the two different colours representing the Indigenous and non-Indigenous peoples living in the desert (Figure 7).

**Figure 7 The Desert Knowledge Brand**

(Source: Desert Knowledge CRC 2004: front cover)

Brands, more broadly, are linked to ideas of differentiation and identification (Aitken and Campelo 2011:914). A brand is a symbol, name, design, term or other feature that identifies a good or services as distinctively different from another (Field et al. 2012). Product and service differentiation, through branding, value adds, and creates a unique identity in a crowded market (Johansson and Cornebise 2010). Building the value of brands – brand equity – is ‘about fostering a number of possible attachments around the brand … experiences, emotions, attitudes, lifestyles or, most importantly perhaps, loyalty’ (Arvidsson 2005:239; cited in: Pike 2009b). Brands thus operate as a ‘flexible ordering device — promoting continuity in a context of perpetual change’ (Bryant 2013:517). This ordering is a combination of the rational market imperative for competitive advantage that pushes for differentiation, and the relational ordering which relies on the emotional attachments and attitudes.

Branding is a mode of communication and communication is always a two-way process; it is something ‘done with and not to the consumer’ (Kavaratzis 2005; Morgan,
Producers, consumers, partners and stakeholders co-create them (Aitken and Campelo 2011). ‘What values and meanings people ascribe to specific brands and how they respond to branding, for example, are entangled in their own socio- spatial relations and identities and their perceptions of the brand and branding’s spatial associations and connotations’ (Pike 2009a:620). Brands are ‘socially constructed, culturally dependent, and communally ‘owned’, and as Aitken and Campelo go on to argue, understanding this promotes a ‘radical shift in understanding brands and brand ownership (Aitken and Campelo 2011:916). Co-creation of brand meaning by consumers shifts brands from the realm of IPRs to consumers and brand users, and ‘changes the control and ownership of the brand from firm to consumer-centred’ (Aitken and Campelo 2011:916). Brands have become ‘ideological referents’ that shape practices and norms (Schroeder 2009). As I elucidate later in this section, the ‘desert knowledge’ brand operated as a ‘knowledge brand’ (Eppler and Will 2001) and a ‘place brand’ that influenced the placement of Indigenous knowledge in DKCRC research.

In a knowledge society, where organisations compete for knowledge and funding to create new knowledge, ‘the branding of that knowledge becomes a crucial — and strategic — marketing activity’ (Eppler and Will 2001:2). A ‘knowledge brand’ has four functions: materialisation, simplification, legitimisation, and differentiation (Eppler and Will 2001). The function of a knowledge brand, as Eppler and Will argue, is ‘to make visible the value proposition inherent in a competence visible and tangible (materialisation)’ (Eppler and Will 2001:9). Using slogans, knowledge brands can simplify the complexity for marketing (simplification). Relating skills and knowledge to particular institutions, through a knowledge brand, legitimises that knowledge (legitimation). Lastly, a knowledge brand differentiates an organisation’s knowledge by showing that it is: valuable to customers; rare; difficult to imitate; and difficult to substitute (differentiation) (Eppler and Will 2001).

The ‘desert knowledge’ brand, as a ‘knowledge brand’, simplified the complexity of finding explanations and answers to things such as labour markets supply; cost of service delivery; sustainable desert settlements and climate variability. It did this through the slogans: ‘Linking Desert Australians, Finding Desert Solutions’ and ‘Desert Knowledge is the unique knowledge we have about living well in the desert.’ It simplified this complexity into ‘finding desert solutions’ and ‘unique knowledge we have about living well in the desert.’ The ‘desert knowledge’ brand was legitimated linking
‘desert knowledge’ to the DKCRC. The DKCRC differentiated ‘desert knowledge’ by linking the knowledge to those people who live well in the desert. ‘Desert knowledge’ was difficult to substitute because it could only be sourced in the desert.

The ‘desert knowledge’ brand also operated, in some ways, as a ‘place brand’. As Campelo et al. argue, the ‘functional role of place branding is not only to identify and differentiate but also to enhance and maintain cultural values’ (Campelo, Aitken, and Gnoth 2011:4). Brands and branding, argues Pike, are ‘geographical because they are inescapably intertwined in spatial associations and connotations’ (Pike 2009a:622). In the case of ‘desert knowledge’ that geographically differentiated a region, this spatial association is with the ‘desert’, and with historical narrations of the desert through ‘the outback’, and ‘the interior’. The ‘desert knowledge’ brand set out to place a product apart from others in order to capture researchers, research funding, policy makers, and businesses.

The ‘desert knowledge’ brand operated through The Desert Knowledge Story and because of this, the next section provides an overview of this story based on the assumption that it contributed to constituting reality (interpretivist) (Roslie et al. 2013). In the analysis I intend to ‘uncover existing reality through story (abstractionist)’ through a ‘narrativist approach’ (Roslie et al. 2013:572). I do this through employing Klein’s ‘Characteristics of Story’2 (Klein 1999; cited in: Mitchell). This is as a simplified way of providing an overview of the ‘surprises’ in the multiple narrations of The Desert Knowledge Story.

‘The Desert Knowledge Story’: telling & re-telling a story

The Desert Knowledge Story, a story told through the Desert Knowledge CRC Annual Reports from 2003-1010 (Desert Knowledge CRC 2004, 2005, 2006, 2007, 2008, 2009, 2010b), formed part of the justification for the establishment and existence of the Desert Knowledge CRC. The story appeared consistently as the third article in the Annual Reports (after the Chairman’s and the Chief Executive Officer’s reports) for the life of the DKCRC. This placement is evidence of the importance that the DKCRC placed in The Desert Knowledge Story. It was a narrative device used by the DKCRC to: provide an historical context to its existence; describe the characteristics of the desert and its relation physically, socially and politically, to the coastal regions of Australia;
provide the justification for locally-based solutions based on ‘desert knowledge’; and to define ‘desert knowledge’. The narrative positioned actors in various ways as Indigenous people (working-aged), academics, researchers, technicians and business people. The Desert Knowledge Story’ expanded on, supported, and explained the ‘desert knowledge’ brand.

This story defined what the desert is, including its characteristics and complexity, and what ‘desert knowledge’ is. The story highlighted limited attention to ‘desert regions’ in government policy, and problematised policy development when it is derived from outside of the desert and then imposed on desert communities. Imported solutions to development were considered to fail because they lacked the contextualised knowledge of living and working in the desert region. The story told that ‘until recently, there was no university or other body to coordinate research activities within Australia’s desert regions’, and while the characteristics of the desert had driven innovation, this was often poorly coordinated. The DKCRC was positioned to fill the research coordination role in the desert, and to assist with creating export opportunities for desert knowledge.

The desert has unique characteristics including: low and variable rainfall, a sparse population, and limited conventional agricultures. Desert Australia is valued for its unspoiled environments, the raw products it provides for the nation, and its remarkable cultural and historical variety. These challenging desert features have driven innovation in everything from technology to service delivery, but often in a poorly consolidated way. There is no university or other body to coordinate research activities in the desert region of Australia. Scant attention has been paid to desert regions that are the ‘backyards’ of States. The challenging features of desert have driven innovation, but often in a poorly consolidated way. This is equally true internationally. A group of people and organisations (including Indigenous people, academics, researchers, technicians and business people) met in the desert in Australia, to discuss the establishment of a place of teaching, learning & knowledge sharing, which could help to improve the livelihoods of people living in the desert; develop new export opportunities for Australian desert knowledge; and change power imbalances between the ‘coast’ and the desert. This place, the Desert Knowledge Precinct, would include the Desert Peoples Centre, Desert Knowledge Australia and the Desert Knowledge Cooperative Research Centre. After years of intense discussion and lobbying this place was established. The Desert Knowledge Cooperative Research Centre draws on a skills base of academics, researchers, technicians and business people that does not exist in any one partner or organisation. It provides the opportunity for knowledge to be shared between and across jurisdictions with a depth of research integrity unmatched elsewhere. Imported solutions fail when they don’t address the unique characteristics of these regions. Australia’s politically stable and technologically sophisticated desert regions can now become the global focus of a
new science and practice of sustainable desert living. From these parochial beginnings, Desert Knowledge is reaching out to desert regions across the continent, and indeed the world [causality].

The Desert Knowledge Story was written in a less linear narrative of context-predicament-agents-intentions-actions-objects-causality than I have presented above. As (Boje 2001)(p2) argues:

The folk of organizations inhabit story telling spaces outside of plot, not tidy rationalized narrative spaces. Narrative analysts replace folk stories with less messy academic narrative emplotments and create an account of organizations that is fictively rational, free of tangled contingency and against story.

To put together a linear narrative I went through and signposted the characteristics of the story as it was presented in the DKCRC Annual Reports and Exit Report (Appendix 6 and Appendix 7).

**+Surprises in The Desert Knowledge Story**

In the telling and re-telling of The Desert Knowledge Story I noted a number of surprises³ in the story (Table 9)(please refer to Appendix 8 for an explanation of the surprises). Two key themes emerged from this analysis that had implications for the IIPP. Firstly, referring to the desert regions as the ‘backyards’ of state (provincial) jurisdiction (+surprise1) locks the desert into a spatial relationship with the State (national). This same surprise is re-told in subsequent narrations as ‘how to compete with coastal regions for resources and the attention of decision-makers.’ Does this coastal-desert division have implications on other types of relationship with the desert, and hence then for Indigenous knowledge or the IIPP? This surprise is given considerable attention later in this chapter.
Table 9 ‘Surprises’ in The Desert Knowledge Story 2003-04

<table>
<thead>
<tr>
<th>Surprise (no.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+surprise1]</td>
<td>Coastal-desert competition &amp; tensions</td>
</tr>
<tr>
<td>[+surprise2]</td>
<td>Young Indigenous population – governance needs</td>
</tr>
<tr>
<td>[+surprise3]</td>
<td>Skills base of particular actors</td>
</tr>
<tr>
<td>[+surprise4]</td>
<td>‘Desert knowledge’ defined for the first time (and subsequently)</td>
</tr>
<tr>
<td>[+surprise5]</td>
<td>Remote communities, remote regions</td>
</tr>
<tr>
<td>[+surprise6]</td>
<td>Home-grown solutions</td>
</tr>
<tr>
<td>[+surprise7]</td>
<td>In contradiction with coastal-desert tension (i.e. +surprise1).</td>
</tr>
<tr>
<td>[+surprise8]</td>
<td>‘Helping’ to remain ‘on country’</td>
</tr>
<tr>
<td>[+surprise9]</td>
<td>Indigenous Intellectual Property Protocol mentioned for the first time</td>
</tr>
<tr>
<td>[+surprise10]</td>
<td>Failures of the DKCRC</td>
</tr>
<tr>
<td>[+surprise11]</td>
<td>Paradox of ‘the bush’</td>
</tr>
<tr>
<td>[+surprise12]</td>
<td>Extension of ‘the desert’ notion</td>
</tr>
<tr>
<td>[+surprise13]</td>
<td>The ‘desert knowledge movement’</td>
</tr>
</tbody>
</table>

Secondly, the definition and use of the term ‘desert knowledge’ seeks to encompass ‘the diverse knowledge’ that people living in the desert ‘have about prospering in the inland’. ‘It’s this local, experiential knowledge that must be shared and developed if people living in the desert are to meet the challenges facing them and deliver value to Australia’

The IIPP became entangled with ‘The Desert Knowledge Story’ and the ‘desert knowledge brand’ based on two distinct aspects. First in relation to defining the ‘desert’ as a region distinctively different from the powerful ‘coast’ (entanglement 1). Secondly, on defining what constitutes ‘knowledge’ or more precisely ‘desert knowledge’ (entanglement 2). The next section explores the first entanglement.

‘Long way from heart and minds of the big cities’: entanglement 1

Australia’s self-image continues to be dominated by stories of the bush. As McCann stated, ‘Australia is one of the most highly urbanized nations in this world, yet rural mythologies continue to shape contemporary discourse about national character and heritage’ (McCann 2005:41). This statement by McCann highlights the way that place, particularly areas outside of urban areas, stories from the desert and rural areas continue to influence research that took place through the DKCRC.

Jack (quote 42)
We're a long way from the hearts and minds of the big cities; we're the backyards of the states.

The statement above by Jack, a DKCRC Board member, was made at the Desert Knowledge Symposium in Alice Springs in October 2006. The statement is a re-telling of one part of The Desert Knowledge Story. The DKCRC 2003-04 Annual Report version of The Desert Knowledge Story told that, ‘scant attention was paid to desert regions which are the ‘backyards’ of the state jurisdictions they spread across — resources are focused on the population-dense seaboard’ (Desert Knowledge CRC 2004:4).

This theme ran strongly in the DKCRC. During the interview Julianne, a DKCRC researcher, she was reminded of the line ‘like five teeming sores’ from A.D. Hope’s poem _Australia_ (Hope 1972:13). At the end of the interview, the researcher read the last three sections of the poem:

```
And her five cities, like five teeming sores,
Each drains her: a vast parasite robber-state
Where second-hand Europeans pullulate
Timidly on the edge of alien shores.

Yet there are some like me turn gladly home
From the lush jungle of modern thought, to find
The Arabian desert of the human mind,
Hoping, if still from the deserts the prophets come,

Such savage and scarlet as no green hills dare
Springs in that waste, some spirit which escapes
The learned doubt, the chatter of cultured apes
Which is called civilization over there.
```

Julianne’s recourse to this poem speaks to the strength of the narrative in the DKCRC network, and the perception that the ‘desert’ as distinctively different from the ‘coastal’ regions, not just geographically but also socially. For example, the DKCRC Annual Reports from 2003-04 through to 2006-07 made specific reference to the desert as being ‘the outback’ or the ‘bush’. As The Desert Knowledge Story narrated in the 2003-04 Annual Report, ‘over two-thirds of Australia is arid or semi-arid. This is the ‘desert’ of Australia’s inland: the outback, the bush’ (Desert Knowledge CRC 2004:4). Again The
Desert Knowledge Story stated in 2004-05 ‘the outback, the bush, desert Australia. Call it what you like, arid or semi-arid regions make up more than two-thirds of our continent’ (Desert Knowledge CRC 2005:4).

Through ‘The Desert Knowledge Story’, the desert was characterised as ‘remote’ and placed as the ‘backyard’ to the coastal regions where the major cities are located, and where it was imagined that power solely resides. This part of The Desert Knowledge Story highlighted the unequal distribution of power and resources, and the unequal development between coastal and desert regions. The coastal regions were positioned as powerful regions of Australia where much of the development has occurred, and the deserts were positioned as powerless and underdeveloped. The coastal-desert division seeks to highlight the power imbalances that occur when people who reside in coastal regions make policies for desert regions. It also highlights the power at play when researchers, such as myself, attempt to understand, write about, and make policy changes, for desert regions when they reside in coastal regions. The coastal-desert division may just be a revival of the urban-rural divide that academic geographers have spoken of for decades, but this changing division is based on not only on population density, cultural diversity or type of markets; but also on ecological factors.

The Desert Knowledge Story borrows, in part, from earlier narratives about the desert, and relies on the characteristic of remoteness (i.e. from markets, cities, policy makers) to create and maintain the coastal-desert division inherent in The Desert Knowledge Story. Throughout many of the publications from DKCRC staff and researchers, the defining social characteristics included: high remoteness from market, highly mobile populations between settlements, higher percentage of Indigenous peoples, high levels of unemployment and service delivery to remote settlements (Davies and Holcombe 2009). The next two sections provide further details on how each of these aspects operate in relation to The Desert Knowledge Story, and its entanglement with the DKCRC IIPP.

Referencing colonial narratives about the desert

While the DKCRC characterisation of the desert as the ‘backyard’ of states is unique, it is not a new narrative. It is part of the tradition through which A.D. Hope wrote, and which the DKCRC silently references through The Desert Knowledge Story. The Desert Knowledge Story is a nuanced re-working of narratives that began in the early years of colonisation in Australia. Perceptions of the desert of Australia have varied
through time and place, in terms of colonial and Indigenous narratives (Heathcote 1987; Robin 2007). Australian deserts, as Bartlett argues, ‘have traditionally been narrated as sites of discovery, exploration, penetration and mapping […] These dominant tropes are enabled partially by the legal and cultural fiction of terra nullius’ (Bartlett 2001:119).

Terra nullius is as much a cartographic as a legal doctrine (Ryan 1996). It worked as a cartographic doctrine that removed Aboriginal people from the landscape and by re-mapping the deserts as ‘vacant spaces’ or ‘unknown spaces’ (Heathcote 1987). As Prout and Howitt note, ‘Australian landscapes have been written, ordered and dominated in particular ways that render Indigenous Australians as always out of place’ (Prout and Howitt 2009:397). Maps of the desert are based on ‘cartographic representations’ of knowledge that constructs Australia’s interior as a blank map that is accompanied by a desire to fill it (Ryan 1996). Based on ignorance, this map constructs the Australia as a screen on which ‘European fantasies’ may be projected (Ryan 1996).

Through early contact between ‘explorers’ and Aboriginal people in the deserts, it became clear that the deserts were not, as some had imagined, ‘vacant places’ or the ‘dead heart’. The diaries and writings of early explorations into the interior of the continent hold accounts of the relationships between early explorers and Aboriginal and Torres Strait Islander guides (Clarke 2008). Earlier imaginings of the desert move from the dead heart to the mythic and spiritual (McMahon 2010; Sheridan 2009), which as McMahon argues, was captured by A.D. Hope’s poem Australia (McMahon 2010). As Heathcote argues, deserts in Australia have been imagined as the hinterland of the coastal regions; as a distinctively different from the coastal regions; and as a barrier to expansion (Heathcote 1987).

The desert, in the early days of the colonial encounter, projected with the story of the in-land sea; inspired early white immigrants to explore the ‘interior’ (Sheridan 2009). The desert changed positions to the ‘imagined centre’ of a continent, which became the site of hope, and where Utopias and Utopian dreams were projected (McMahon 2010; Sheridan 2009). Part of this projected hope was for European styles of agriculture and pastoralism (Heathcote 1987), and in the early nineteenth century, based on the lived reality of early explorers and pastoralists, ‘deserts were not regarded as ecosystems in their own right, but rather defined as places where there was no prospect of an agricultural economy’ (Robin 2007:100-101).
Beyond Australia, the notion of desert as deserted space is popular. Deleuze, for example, in his discussion of deserted islands argues that ‘the real desert is uninhabited only insofar as it presents no conditions that by rights would make life possible, whether vegetable, animal, or human’ (Deleuze 2004:11). The Desert Knowledge Story attempts to change this cartographic doctrine of ‘vacant space’ in Australia through telling, and re-telling the desert as a region, and place of ‘desert knowledge’. The Desert Knowledge Story’s reference of the desert as the ‘backyard’ uses both the idea that the desert is a hinterland of coastal regions, and as distinctively different from the coastal region. In A.D. Hope’s poem, the line ‘her five cities, like five teeming sores’ positions the coast to represent the negative qualities (Sheridan 2009). Existing narratives of the desert become entangled in The Desert Knowledge Story. While ‘The Desert Knowledge Story’ may have been an attempt to create a fresh story of the deserts of Australia that shows that the desert is not a barrier to development or expansion; the historical and geographical narrative of Australian deserts are complex, and this narrative is not separate from the one told by the Desert Knowledge CRC.

In positioning the desert as the ‘backyard’ of the States, The Desert Knowledge Story ruptured the ideas of the core-periphery in power relationships. The desert-coast differentiation, in The Desert Knowledge Story, positioned power and control at the ‘periphery’ of the State (the coast), with the ‘core’ (the desert centre) attempting to harness power and control over policy development and the distribution of financial resources. In discussions of images of the coast in Australia, Sheridan’s comments are pertinent here. Sheridan argues that,

> When the centre-margin metaphor is deconstructed, the first move is to reverse the usual hierarchy of value. Only when this has been done can we begin to shift the opposition from its moorings. The periphery can be conceived as the thing itself, rather than a mere margin. The coast can come into its own as a space, rather than the edge of a large space in which significance resides, or is sought (Sheridan 2009:115).

**Being ‘remote’ when you are ‘home’ on country**

Every story excludes. Every story legitimates a centred point of view, a world view, an ideology among alternatives. No story is ideologically neutral; story floats in a chaotic soup of bits and pieces of story fragments. Story is never alone; it lives and breathes its meaning in a web of
other stories. And, every story since it is embedded in changing meaning contexts of multiple stories and collective story making, ‘self-deconstructs’ with each telling (Boje 2001:18).

As Boje argues above, stories exclude and legitimate particular worldviews, and exist in a web of other stories. The Desert Knowledge Story, because of both its connection to earlier colonial narratives, and changing economic, social and environmental conditions in the desert, may not have been in the process of self-deconstruction; but it did present a narrative which to a certain extent gave emphasis to the relationship of people to the State, rather than people to place and land. It did this through the ‘backyards’ analogy, and the notion of ‘remoteness’. This act partially dis-places Indigenous relationships to place by positing that while Indigenous knowledge is valuable, its value is derived from how it can contribute to desert development, a form of development based on strengthening relationships to the State and the market. This is the same sentiment which is embedded within the DKCRC IIPP; which as argued in the previous chapter was built on two pillars: the need to ensure ethical research practices and to ensure commercialisation.

The desert as the ‘backyard’ narrative moves beyond relationships of actors with the ‘colonial state’ to relationships between actors and the ‘capital state’. The desert as the backyard notion made apparent the spatial division of power across the Australian landscape in distinct contrast to the coastal regions where, in Australia, all of the major cities are located. The further away an actor is from the influences of the State, as conceived through cities, roads, government departments, banks and large populations of people, the more ‘remote’ they are said to be. With larger distances from areas of power, and as places with fewer State influences and less infrastructure, the desert gained the label and imagining of remoteness.

The Desert Knowledge Story additionally posits that ‘remote settlements still face supply-side issues, struggle to retain jobs and the wealth generated by their resources, and Aboriginal Australians remain significantly disadvantage compared to non-Aboriginal Australians’ (Desert Knowledge CRC 2010b:4). This part of the Story is a clear indication of the importance of the relationship to the market, rather than relationship of Indigenous peoples to place, where they would be positioned as advantaged rather than disadvantaged.
Remoteness, in The Desert Knowledge Story, supports the positioning of the State and the market. Anything that is distant from either of these is categorised as ‘remote’. This is certainly the notion that the editors of the special DKCRC edition of *GeoJournal* used when they argued that:

> ‘remoteness of desert people from political centres and major markets makes them vulnerable not only to climate variability and uncertainty, but also to institutional changes over which they can exercise little influence. The potential is for a self-perpetuating cycle, where sparse populations are trapped in poverty by decisions at larger scales that ignore local specificities’

(Davies and Holcombe 2009:365).

Remoteness is not just a characteristic used by The Desert Knowledge Story. It is a key characteristic highlighted by many actors conceptualising or measuring the desert. Stafford Smith’s conception of the ‘desert syndrome’ — the causally-linked factors that characterise outback Australia — gave centrality to the notion of remoteness (Stafford Smith 2008). The Australian Bureau of Statistics (ABS) through the accessibility/remoteness index of Australia (ARIA) (Australian Bureau of Statistics 2014) uses remoteness as a measurement based on road distance to the nearest town in one of five size classes (Stafford Smith 2008). Under ARIA, most of the Australian desert is classified as ‘very remote’ (Stafford Smith 2008). Remoteness is a short hand term for referring to a disadvantage based on distance or proximity to services and locations that are more closely associated with the control and power of the State and the market. You are said to be remote when you are distant from these locations or spheres of control.

‘Remoteness’ partially fails to accept the lived reality that for many actors in the desert, their focal points may not necessarily be the nearest town, or the State, but rather where they live – their ‘home’. Remoteness is based on an assumption that the power and control of the capitalist State over the daily existences of actors is the more important relationship to consider. But remoteness also masks the fundamental existence of place. While it may be possible to be ‘remote’ from the market economy, how can you be remote when you are ‘home’? ‘Home’, as a place for providing identity, holds a particular formulation of power. If ‘home’ is where your power is, what does the application of the classification of remoteness mean for the workings of power? Gibson Luckman and Willoughby-Smith, in their analysis of the impacts of remoteness and
isolation on the creative industries in Darwin, argue that ‘remoteness is as much a state of mind as a geographical reality’ (Gibson, Luckman, and Willoughby-Smith 2010:36).

The labelling of the desert in terms of remoteness is a strong and almost necessary association for policy development and service delivery. However, the notion of remoteness was problematic for the DKCRC IIPP. The DKCRC IIPP sought to ensure that Indigenous peoples rights to their knowledge was recognised in DKCRC research. It, to a certain extent, gave emphasis to the economic value of Indigenous knowledge and positioned the DKCRC as an ethical research organisation. Indigenous knowledge, as discussed in Chapter Two, is often defined as being ‘situated knowledge’ and born of place. The Desert Knowledge Story’s emphasis on a relation of people to the State and market under-wrote the relationship of people to place – the relationship that Indigenous knowledge is said to be dependent. This created confusing mixed messages for the DKCRC and the DKCRC IIPP. The materialisation of the bias toward State and market relationships in The Desert Knowledge Story was most discernable through the need to produce commercial outputs, which was one of the over-riding needs for the DKCRC.

This amounts to the idea that even if your most important relationship is to place — where you derive meaning and economic stability — you can still be remote when you are ‘home’. I am not suggesting that relationships of people to State or the global market are not important. They are. But the idea of ‘remoteness’ creates powerful rhetoric that drives policy in Australia based on strengthening relationships to the State and the market rather than to place. It creates, in effect, a hierarchy of relationships to space/place. With relationships to the State and the market positioned at the powerful position in the hierarchy that is given the most political attention and funding.

Being positioned as ‘remote’ undermines the existing relationships that people have to place. It places emphasis on the relationship of people to the State and the market, while undervaluing the importance of relationships that people have to the places in which they live, inhabit and call ‘home’. Relationships between people and ‘home’ become secondary to relationships between people, the State, and the market. In a globalised system, relationships to the State and market are important, yet the DKCRC sought to utilise knowledge, which for many Indigenous peoples in the desert of Australia, is embedded in place. Does placing emphasis on the relationship to the State undermine
relationships to ‘home’? This harks back to the idea that land is both material and sacred. As Langton argues,

> The way that Aboriginal people perceive landscapes is rather like the way that someone with a reasonable astronomical knowledge in western culture perceives the night sky resplendent with shining stars [... there is the knowledge behind these perceptions that we can only know these things because of our understanding of time as past-present-future (Langton 2005:138).

‘Hoping, if still from the deserts the prophets come’: entanglement 2

The A.D Hope poem *Australia* includes the line ‘hoping, if still from the deserts the prophets come.’ This line resonates with an over-riding theme in the branding and telling of desert knowledge which told that ‘home-grown solutions’ were the answer to development in the desert. As The Desert Knowledge Story told in the 2007-08 DKCRC Annual Report, ‘in Alice Springs in the late 1990s a diverse group of people set to work on recording and systemising ‘home-grown solutions’ under the heading of ‘desert knowledge’ (Desert Knowledge CRC 2008:4). This idea was told consistently throughout the narration of The Desert Knowledge Story in the annual reports.

The notion of ‘home-grown solutions’ provides a place for Indigenous knowledge, and enhances the positioning of the IIPP within the DKCRC. It gives credence and value to solutions, from whichever knowledge tradition they are derived. Yet, the very notion of ‘desert’ is itself based on a scientific classification. The next section discusses the definition and use of the term ‘desert knowledge’.

*Desert knowledge*—place based knowledge and a hierarchy of knowledge?

*The diverse knowledge these Australians have about prospering in the inland is what we call ‘desert knowledge’. It’s this local, experiential knowledge that must be shared and developed if people living in the desert are to meet the challenges facing them and deliver value to Australia* (Desert Knowledge CRC 2005:4).

*‘Desert Knowledge’ is the term for the diverse knowledge these Australians have about prospering in remote and often harsh environments* (Desert Knowledge CRC 2007:4).
‘Desert Knowledge is the unique knowledge we have about living well in the desert’ (Figure 6).

The quotes above, from The Desert Knowledge Story as narrated in the 2004-05 and 2006-07 DKC Annual Reports, define ‘desert knowledge’ as the diverse and unique knowledge about living and prospering in the desert [+]surprise4. Desert knowledge includes knowledge from the desert that is local experiential knowledge. As a category ‘desert knowledge’, as Robin argues:

> embraces both the physical and the moral in the arid country […] ‘Desert knowledge’ explicitly embraces cultural understandings. It considers both local Indigenous knowledge and western science in relation to country that is spares in population, but is clearly very different form deserts in others parts of the world. Desert knowledge includes knowledge built from large-scale surveys and economic imperatives for development, but adds the mosaic detail of local knowledge of the desert, and respects the local community understandings, settler and Indigenous alike’ (Robin 2007:120).

As Robin points out, desert knowledge includes a mix of knowledge from Indigenous and ‘western science’, and respects local community understanding. The category ‘desert knowledge’ – and The Desert Knowledge Story and brand which contextualise and sell it – provide the necessary epistemological structures for the positioning and functioning of the IIPP. It allows a space for the recognition of the value and of Indigenous knowledge in developing the desert. As Robin also suggests, this recognition includes moral dimensions such as the recognition of a knowledge tradition previous excluded from development agendas, and the use of this knowledge on the basis of a Indigenous systems of governance which control how this knowledge ought to be accessed and utilised.

There are, however, two hidden aspects within the category of ‘desert knowledge’ that are problematic. Firstly, the ‘desert knowledge’ category created a pan-knowledge. In The Desert Knowledge Story there are small glimpses of the replication of the historical marginalisation of Indigenous knowledge, which suggests the possibility that a hierarchy of knowledge was in the process of forming through this pan-knowledge category. Secondly, ‘desert knowledge’ placed particular emphasis on knowledge that could contribute to prosperity, and delivering value to Australia. Both of these bias ‘desert knowledge’ towards knowledge that can meet material needs of the economy, rather
than emotional or spiritual needs. This is a reinstatement of rational order over relational order. I consider both of these points in turn in the following paragraphs.

Firstly, given the history of marginalising Indigenous knowledge in some research areas, there was a risk that this ‘mix of knowledge’ did not act as a mix whereby knowledge was considered and treated equally, but rather arranged (by itself or others) into a hierarchical order with science at the top and indigenous knowledge at the bottom. There was a hint of this in The Desert Knowledge Story which made mention of the ‘skill base’ of academics, researchers, technicians and business people but with Indigenous people or others living in the desert missing from these categories of knowledge producers (+surprise3). For me, this statement appears to indicate the targeting of a particular ‘sort’ of knowledge.

It is difficult to consider if this actually occurred. How would one actually go about this task of finding out? It would perhaps require: an analysis of all research projects undertaken at the DKCRC, and see to what extent Indigenous knowledge was incorporated; an analysis of the distribution of funding and other resources across the research projects; and interviews with staff and partners engaged in the research. This undertaking was outside of the scope of this research. It does however raise questions about determining the operations of power and control in organisations that attempt to utilise Indigenous knowledge as a founding form of ‘capital’.

Secondly, The Desert Knowledge Story defined ‘desert knowledge’ in terms of contributing to the prosperity of those living in the desert, and more broadly to the value of Australia. The prevailing economic framing of prosperity focuses on the material dimension (Jackson 2009). It is possible, under this definition, that the DKCRC was only interested in knowledge that could be packaged to meet the market demands for information that could fulfil material needs? The very notion of ‘of prospering’ hints at the need to meet the expectation of material wealth, as facilitated through the market economy. It is possible then, that some of the aspects about ‘wellbeing’ and ‘spiritual health’ or ‘relationships’ are of lesser value for development because they may not necessarily contribution to material or financial success.

The ‘desert knowledge’ brand subsumed Indigenous knowledge, local knowledge and scientific knowledge. Further, the term ‘desert knowledge’ implies that it cannot be
produced anywhere but the desert. It firmly locates knowledge in a place, the desert. It is contradictory then that many of the researchers, such as myself, were for the most part located in the coastal non-desert regions of Australia.

**The desert region based on a scientific classification**

*Desert Knowledge is the unique knowledge we have about living well in the desert* (Figure 6).

The DKCRC slogan quoted above makes it clear that desert knowledge pertains to a particular thing — the desert. ‘The arid inland,’ as Heathcote argued, ‘has been recognized to be a separate region of the continent, characterized by a distinctive arid ecosystem, history of resource management and role in the development of a national culture’ (Heathcote 1987:9). This distinctiveness of the region based on ‘arid’ ecosystems or ‘aridity’ means that the desert is scientifically defined. The Australian Bureau of Metrology classifies arid and semi-arid regions in Australia through a modified version of the classification system derived by Dr Wladimir Köppen (Commonwealth of Australia 2006). In Australia, arid and semi-arid regions stretch across a majority of the States and Territories (with the notable exception of Tasmania and the Australian Capital Territory) (Figure 8).

The ‘desert’, as others have written, has been historically classified on the basis of precipitation and evaporation (Sandquist 2014). It is the physical, material characteristics that are highlighted in definitions of the desert. Based on the scientific criteria of ‘aridity’, deserts make up approximately 18% of the landmass of Australia and extend through Western Australia, Northern Territory, Queensland, South Australia and New South Wales (Table 10) (Commonwealth of Australia 2004). Deserts are landscapes with physical geography traits of spare vegetation. In Australia there is not one ‘desert’ but many. The historical boundaries of these deserts is outside the scope of this study, however, on a superficial reading ‘explorers’ have influenced the naming of at least four deserts in Australia. They include the Simpson, Gibson, Strezleki, and Sturt Stony deserts (Commonwealth of Australia 2004), which suggest historical and social connections to particular perspectives of the deserts.

The notions of ‘arid’ and ‘semi-arid’ were the primary concepts through which ‘the Desert Knowledge Story’ and DKCRC narrative embedded scientific knowledge. Based
on the criteria of precipitation and evaporation, the delineation and naming of a ‘desert’ region acts as a cartographic tool in mapping a region which places and embeds scientific knowledge. When an entire region is defined and classified according to science or the sojourns of an explorer, is it even possible to ensure that a hierarchy of knowledge does not follow? All of the DKCRC Annual Reports from 2004 – 2010 give the definition of a desert as ‘arid’ or ‘semi-arid’. This places the boundary, and thus deserts within the realm of science and a more rational approach to defining knowledge.

Figure 8 Arid and Semi-arid regions in Australia

(Source: Commonwealth of Australia 2006:3)
Table 10 Australian Deserts

<table>
<thead>
<tr>
<th>Name</th>
<th>State/Territory</th>
<th>Size (km²)</th>
<th>Australia (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Victoria</td>
<td>WA, SA</td>
<td>348 750</td>
<td>4.5</td>
</tr>
<tr>
<td>Great Sandy</td>
<td>WA</td>
<td>267 250</td>
<td>3.5</td>
</tr>
<tr>
<td>Tanami</td>
<td>WA, NT</td>
<td>184 500</td>
<td>2.4</td>
</tr>
<tr>
<td>Simpson</td>
<td>NT, Qld, SA</td>
<td>176 500</td>
<td>2.3</td>
</tr>
<tr>
<td>Gibson</td>
<td>WA</td>
<td>156 000</td>
<td>2.0</td>
</tr>
<tr>
<td>Little Sandy</td>
<td>WA</td>
<td>111 500</td>
<td>1.5</td>
</tr>
<tr>
<td>Strezleki</td>
<td>SA, Qld, NSW</td>
<td>80 250</td>
<td>1.0</td>
</tr>
<tr>
<td>Sturt Stony</td>
<td>SA, Qld, NSW</td>
<td>29 750</td>
<td>0.3</td>
</tr>
<tr>
<td>Tirari</td>
<td>SA</td>
<td>15 250</td>
<td>0.2</td>
</tr>
<tr>
<td>Pedirka</td>
<td>SA</td>
<td>1 259</td>
<td>Less than 0.1</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>1 371 000</td>
<td>18</td>
</tr>
</tbody>
</table>

(Source: Commonwealth of Australia 2004)

According to Heathcote, the perceptions of the desert as a region has varied from the desert as a challenge; a threat (through drought to pastoral development); and a geographical laboratory (Heathcote 1987). The Desert Knowledge Story and the brand have added another perception of the desert as a place for development. It builds on the idea that the desert region is a challenge, and uses it as a geographical laboratory to build knowledge capital for development. The Desert Knowledge Story and brand position the desert as a region where local solutions, through the form of knowledge, can be found to further develop the desert.

Stafford-Smiths discussion of the ‘desert syndrome’ proposed that deserts include a number of variables such as climate variability, scarce resources, sparse populations, remoteness, local knowledge, cultural differences and social variability (Stafford Smith 2008). Yet defining challenges as distinct to a particular region such as the ‘desert’ is problematic because these challenges may exist outside of the desert. One of the surprising aspects of The Desert Knowledge Story was told in the 2008-09 DKCRC Annual Report. This report started that:

*The partners also recognised that the drivers of remote economic participation are not necessarily encompassed by environmental boundaries; that is, the problems of ‘the desert’ extend to remote communities across the nation. Rainfall itself is not an indicator of a community’s ability to generate livelihoods or of a business’s ability to create wealth, add value and operate sustainably’* (Desert Knowledge CRC 2009: 4)
Deserts challenges, as The Desert Knowledge Story suggests, exist outside of desert areas. This hints at what Boje, as quoted earlier in this chapter, called ‘self-deconstruction’ of a story.

The ‘desert knowledge’ brand and The Desert Knowledge Story created a hierarchy of knowledge through which all DKCRC knowledge was classified, and whereby Indigenous knowledge was subsumed and conceptualised as a category under this grouping. Indigenous knowledge was dis-placed through the ‘desert knowledge’ grouping. Rather than a knowledge system based on Indigenous peoples cultural beliefs, groupings and values, the ‘desert knowledge’ grouping became the overriding classifier of knowledge in the desert. A protocol set up to recognise the relationships, and property rights, that Indigenous people have with Indigenous knowledge then seems illogical. A protocol that sought to recognise Indigenous rights to knowledge would not seek to subsume Indigenous knowledge under a hierarchy of knowledge that makes it a category like all others.

Re-telling The Desert Knowledge Story

The Desert Knowledge Story told some of the history of the DKCRC, but it didn’t tell the entire story; particularly where the IIPP was concerned. The IIPP was not mentioned in The Desert Knowledge Story until the 2007-08 DKCRC Annual Report (+surprise9) that stated:

Another focus for the [Social Science] program was to update our Aboriginal Intellectual Property Protocol. An expert in IP law and Aboriginal knowledge was engaged, and nine plain-English briefing papers were developed. The revised protocol (renamed the ‘Aboriginal Knowledge and Intellectual Property Protocol’, AKIPP) clarifies how both Aboriginal knowledge and Aboriginal intellectual property are to be managed. A work in wrote a submission to the United Nations Report of the Secretariat on Indigenous Traditional Knowledge (Desert Knowledge CRC 2008:5).

Apart from this instance, more broadly, The Desert Knowledge Story did not specifically include ethical concerns over utilisation of desert knowledge and longer-term sustainability of people living in the desert. Ethical concern over the exploitation of the ‘owners’ of ‘desert knowledge’, and longer-term strategies for sustainable
livelihoods was however part of the broader narrative of the DKCRC. For example, the 2003-2004 Chairman’s Report asked the following questions:

How do we exploit desert knowledge, without exploiting its owners? How do we develop the critical mass necessary to carry out research of the highest calibre? How do we develop the capacity required to ensure that benefits accrued in the life of this Centre are ongoing? And how do we nurture the end users of our research to create secure and sustainable livelihoods for desert dwellers, now and in the future? (Desert Knowledge CRC 2004:3).

The initial existence of the IIPP and why it needed to be updated was absent from The Desert Knowledge Story; but within the body of the same Annual Report there is some explanation of why the IIPP was established. As the 2003-04 Annual Report indicated:

In order to ensure the protection of IIP the DK-CRC developed an Indigenous Intellectual Property Protocol, and built a clause into its Centre Agreement which stipulates that all participants be aware of this protocol. The protocol meets national ethical standards. It covers issues as diverse as the storage and retrieval of IIP data collected during the course of research, to potential commercialisation practice and benefits. The protocol provides clear guidelines as to when a low-risk activity may justify a less rigorous application of the protocol than to a high-risk activity.

The protocol is managed and developed under the guidance of the Board’s Intellectual Property and Ethics Committee (Desert Knowledge CRC 2004:13).

As the IIPP indicated in clause 8:

Continual improvement: advice will be taken from indigenous stakeholders and research within the CRC will be carried out to enable ongoing development of ethical standards for defining and handling Indigenous IP, and for improving the ways in which the formal scientific method interacts with local indigenous knowledge. The Board may update this Schedule to reflect these improvements (Desert Knowledge CRC 2003:2).
Conclusion

In this chapter I focused on how the IIPP became entangled with The Desert Knowledge Story and the ‘desert knowledge’ brand. Both of these were tools used by the DKCRC to capture funding and policy attention. The creation of the brand ‘desert knowledge’ was a particular strategy of capitalism to enhance market competition as well as cooperation. The Desert Knowledge Story was an attempt to create an easily understood narrative that could easily translate the ideas of the DKCRC.

The first section of the chapter gave an overview of ‘desert knowledge’ as a knowledge and place brand. The second section explored The Desert Knowledge Story and outlined some of the surprises that were evident in the story. The last two sections of the chapter explored how the IIPP became entangled in the idea that the desert is the ‘backyard’ of the Sates, and that the deserts are positioned as a place from which ‘knowledge’ comes. In the case of the former, I explored how colonial narratives informed The Desert Knowledge Story that creates problematic associations for the Desert Knowledge CRC. I also explored the notion of ‘remoteness’ and the implications of this concept for actors who may hold land as a more important relationship than those to the State and the market.

I began by this chapter by outlining the context in which the IIPP existed through an exploration of the official ‘Desert Knowledge Story’. I did this to highlight how the DKCRC defined and conceptualised ‘desert’ and ‘knowledge’, and the place which ‘Indigenous knowledge’ had in relation to these. The telling (and re-telling) of The Desert Knowledge Story painted an historical narrative of the desert that, in contrast to the coastal regions, is an under-resourced and subject to the importation of poor policy solutions.

The Desert Knowledge Story was a wonderful narrative to focus attention on development in the desert regions of Australia. The Story was able to include localised knowledge and Indigenous knowledge, yet there were limitations that influenced the IIPP. When bureaucratic protocols are enacted in research contexts they become entangled in differing conceptualisations of knowledge. Firstly, the ‘desert knowledge’ brand defined what constitutes ‘knowledge’ or more precisely ‘desert knowledge.’ Through this a hierarchy of knowledge was established that subsumed Indigenous
knowledge as a category of knowledge subject to the logic of desert knowledge. I argue that the ‘desert knowledge’ brand attempted to sell its own geographical narratives of how power is distributed across the Australian landscape. Secondly, ‘The Desert Knowledge Story’ defined the ‘desert’ as a region distinctively different from the powerful ‘coast’. I compare the ‘Desert Knowledge Story’ to colonial narratives of ‘outback’ and ‘bush.’ In these narrative, and The Desert Knowledge Story’, the ‘desert’ is categorised as ‘remote’. This classification undermined peoples positioning in relation to their ‘home’ through suggesting that primary relationship ought to be to the State rather than their land or something else.
Chapter Eight
Chapter Nine. Protocols for reinforcing the knowledge gates: a conclusion

Introduction: leaving the field

Long after I had finished interviewing actors in the DKCRC, and before the DKCRC had ceased its operations, I tried to extricate myself from its networks to provide space for contemplation and reflect upon what I had seen and heard through the course of the research. During this period I went to fetch my mail only to find a DKCRC Annual Report. The first time I received a DKCRC package I thought nothing of it. However, when the DKCRC Annual Reports and Working Papers continued to arrive in my letterbox I was mildly bemused and was left without a doubt that I was in both a rationally and relationally ordered relationship with the DKCRC. I considered the receipt of DKCRC Annual Reports and Working Papers was less a considered move on the part of the DKCRC staff, but rather an automated response of sending out mail to a large number of people. I considered that the relationship I now had with the DKCRC was also relationally ordered, because while the reports and working papers continued to arrive and my very small letterbox and apartment could not cope with the mail, I was unable to bring myself to tell the staff that I no longer required them. To do so would have been, at least I thought, a snub to the DKCRC. While the reports provided information for my research on the DKCRC and its IIPP I did wonder what purpose they would serve beyond that.

My leaving the field story, reiterates that through the act of signing a contract to ‘become an actor’ of a CRC, actors are etched into the CRC ‘machine’ in ways that permit them to also become a part of the CRC ‘ensemble’. The standardisation of actors authorises CRCs to track progress in research, and permits the automation of procedures such as the mail out of CRC reports and working papers to the actors in its database. My apprehension at requesting the DKCRC to stop sending me reports and working papers related to the dynamic tension between rational and relational order. While I wanted to remove myself from the DKCRC ‘machine’ and to stop receiving some of their mail, I was concerned that by doing so would jeopardise my position with the DKCRC ‘ensemble’ and the relationships I had established over the course of the research.
At the root of my concern were protocols. Not the IIPP specifically, a protocol established to protect Indigenous knowledge, but the broader protocols of research etiquette that the IIPP connected to. How should a researcher withdraw themselves from their field of research, should a researcher withdraw completely from a research field and does this change when working with Indigenous people and Indigenous knowledge, what should a researcher do with all of the knowledge they’ve amassed, what should a researcher do with that knowledge when the organisation has ceased operations or a person has died? The IIPP too was concerned with providing guidance to researchers who may have faced these questions while engaging with Indigenous people, and seeking to use Indigenous knowledge, as part of their DKCRC research practices. Protocols predict some of the future scenarios that people may encounter in particular situations and sets out the rules that actors ought to follow. However, as I’ve shown throughout this thesis, actors do not enact protocols uniformly in practice.

In this thesis, I set out to examine how protocols order research practices and knowledge, and how actors enact protocols. Borrowing from Galloway’s (2004) argument that protocols embed a contradiction between a machine that distributes control to autonomous locales, and a machine that embeds control in ridged hierarchies, I argued throughout this thesis that protocols order research practices and Indigenous knowledge both relationally and rationally. In this thesis I considered protocols as knowledge, and mapped a particular protocol assemblage, the IIPP, in order to undertake a closer examination of how entities rationally and relationally order practices and Indigenous knowledge in organisations.

As I discussed in Chapter Two, Weber’s theory of ‘bureaucracy’ (Weber 1968), which draws on the ‘machine’ metaphor, directs attention to the rational processes of standardisation, precision, speed and efficiency that characterise organisations. Similarly, transaction cost theory and agency theory direct attention to the association between coordination and the hierarchy of firms (Coase 1937), the contractual nature of agent-principal relationships in firms (Alchian and Demestz 1972; Jensen and Meckling 1976), and the self-interested motivation of agents (Cuevas-Rodríguez, Gomez-Mejia, and Wiseman 2012; Eisenhardt 1989). I drew upon Weber’s analysis of ‘bureaucracy’, transaction cost theory, and agency theories of ‘firm’ to explore rational order in organisations. Through these theories I suggested that relationships that are coordinated
through contracts draw from contractarian ethics the idea that duties are negotiated through consent (Bauman 1993). Consenting to a contract implies the ‘calculability of action’ (Bauman 1993), and through the process of negotiation agents act in their own self-interest thus embodying a form of utilitarian ethics (Shafer-Landau 2013).

However, actors in organisations do not always act out of self-interest. As I discussed in Chapter Two, the ‘relational turn’ in social theory (Bathelt and Gluckler 2011; Boggs and Rantisi 2003; Dépelteau 2013; Jones 2013; Sunley 2008), and critiques of agency theory (Davis, Schoorman, and Donaldson 1997; Hernandez 2012; Le Breton-Miller and Miller 2009; McArthur 2012; Schillelmanns 2013; Van Slyke 2006; Wolfson 2012) suggest that a relational order is at play. Drawing on these two bodies of work, I suggested actors in contract relationships also act through altruistic motivations.

I used the ‘machine’ and ‘ensemble’ metaphors to easily move focus in the analysis between rational and relational order in organisations. My use of the ‘machine’ metaphor mirrored Weber’s (1968) ideas that bureaucracies are based on the standardisation and calculability. I considered the use of the ‘organism’ metaphor, but discarded it in favour of the ‘ensemble’. As I discussed in Chapters Two and Three, this was done to overcome theoretical difficulties associated with using Deleuze and Guattari’s assemblage thought (Deleuze and Guattari 1987) and the particular ways that it defines ‘organism’. Through introducing the ‘ensemble’ metaphor, I suggested that actors in organisations perform together in relation to one another. They do not just behave in a standardised calculable manner. I created the ‘ensemble’ metaphor as an alternative to the ‘organism’ metaphor to allow a reconfiguration of Deleuze’s and Guattari’s assemblage thought that posits that all of life as a machine (Colebrook 2002). I disagree with Deleuze and Guattari on this point. I suggested that the ‘assemblage’ is better placed as a supra-structure that assembles rational (machine) and relational (ensemble) order.

Protocol-as-assemblage: multiple ethical frames

In this thesis, I used the case study of an organisational protocol to consider the complexities of recognising and protecting Indigenous rights to knowledge through cooperative research practices. The DKCRC was a research organisation with a strong brand and organisational story that existed in Australia from 2003 to 2010. Its protocol,
the IIPP, was developed and implemented at the inception of the DKCRC in 2003. Since leaving the field, after consultations with stakeholders the DKCRC updated the IIPP and renamed it the Protocol for Aboriginal Knowledge and Intellectual Property (Desert Knowledge CRC 2008). Then in mid-2010 the DKCRC ceased operations.

This thesis utilised Deleuze and Guattari’s assemblage thought (Deleuze and Guattari 1987) to explore the entities that made up the IIPP assemblage. As I discussed in Chapter Three, assemblages consist of content (things, actions) and expressions (enunciations and statements), and territorialities that ‘stabilise it’ and ‘carry it away’ (Deleuze and Guattari 1987:88). Assemblage thought is a form of relational thought that allows for the examination of arranging and fitting together of the ‘whole’ and its ‘parts’ (Anderson and McFarlane 2011; Livesey 2010; McFarlane and Anderson 2011).

As I suggested in Chapters Four, Five, Six and Seven, the IIPP assemblage gathered together the ‘Indigenous intellectual property’ category, standard categories of actors, contracts, and procedural ethics to regulate access to Indigenous knowledge. The DKCRC hierarchy, through the Board, enabled the operationalisation of the IIPP through the DKCRC. While each of these entities embedded rational order; they also enabled relational ordering of research practices and Indigenous knowledge. The ‘Indigenous intellectual property’ category, for instance, made Indigenous knowledge a category of knowledge which DKCRC actors had to, either through their own assessment or in collaboration with Indigenous peoples and others, consider as a form of knowledge that had existing relationships attached to it. Procedural ethics, while a routine standardised process for gaining research ethics approval, provides the footing for actors to consider their own relationships in their research practices and how they will seek to uphold the ethical principles embedded in national ethical research standards and the IIPP. The IIPP directed the Board to establish an economic mechanism to distribute economic benefits, from a certain percentage of DKCRC research, to Indigenous people. It was a rational approach to instituting relational order.

In Chapter Four, through an analysis of the perception of DKCRC actors, I suggested that the IIPP established rules for engagement, prescribed rights to knowledge, and sought to ensure that DKCRC research contributed to something broader. Through its three functions, the IIPP assembled a range of ethical frames including contractarian,
consequential, rights-based and deontological ethics. In Chapter Five I suggested that contractarian ethics supported the IIPP because it was legally tied to the DKCRC suite of agreements. DKCRC actors signed contracts that allowed them to operate as actors in the bureaucratic ‘machine.’ In doing so they consented to the rules and obligations of the IIPP that were outcome of negotiations and rational decision-making. Contractarian ethics, also assembled through clause seven of the IIPP, established a mechanism to distribute benefits from DKCRC research to Indigenous people and communities in the desert. This mechanism was based on the principle of ‘distributive justice.’

Consequentialist (utilitarian) and rights-based ethics was embedded in the IIPP assemblage through the ‘Indigenous intellectual property’ category which assigned property rights to Indigenous people. The use of this category was based on the idea that Indigenous communities and other people in the desert regions benefit more broadly from Indigenous people are given exclusive rights to stop others misusing their knowledge. It was linked to the State requirement for CRCs to establish a system for commercialisation of IP, and was based on the consequentialist idea that innovation flows the granting of these rights (Merges 2011; Mossoff 2013).

Deontological ethics was embedded in clauses two to five of the IIPP, which established the rules of engagement for DKCRC actors who sought to access, use, store or commercialise Indigenous knowledge. In Chapter Six I suggested that actors enacted the deontological dimensions of the IIPP rationally through ‘procedural ethics’ and relationally through ethics-in-practice (Guillemin and Gillam 2004). DKCRC actors, through the IIPP, were required to lodge an ethics application outlining how they planned to access, use, store or commercialise Indigenous in their research. Procedural ethics was based in large part on obtaining consent — or opening the ‘proprietary gate’ (Kleinig 2010), which drew the IIPP back towards a contractarian ethics. However, lodging an ethics application and allowing a HREC to discuss possible ethical implications of the research processes, firmly situates the IIPP within deontological ethics.

Establishing protocols to protect Indigenous knowledge are predicated, in part, on the belief that actors will rationally enact them — that is that they will read the clauses and enact them in a standardised way. However, actors enact protocol through both
standardised and flexible forms. As I suggested in Chapter Six, some DKCRC actors, even after consenting to use the IIPP in their research practices, sidestepped the protocol in favour of a more fluid relational ethics, or they challenged the validity of the principles and sought to change the IIPP. Protocols are established to change researcher practices, and because of this, the analysis of how actors enact protocols is crucial to understand how protocols order practices. Understanding protocol enactment enables researchers, organisations and Indigenous communities to modify protocols (or their own behaviour) as they reflect on their research practices. To assist with a reflective approach to research, I suggested that actors enact protocols in at least three ways. I provide an outline of these below.

**Rational and relational order: gatekeepers, guardians and gatecrashers**

In Chapter Two I provided an overview of a selection of papers in various fields that critically analyse protocols. I did this to provide language through which it would be possible to critically analyse protocols established to protect Indigenous knowledge. In that chapter I considered how protocols resemble chains of command (Staller 2010), road rules and telephone conversations (Galloway 2004) and recipes (Berg 1998; Lynch 2002). The recipe analogy, with terms such as ‘ingredients’ and ‘instructions’ (Lynch 2002), focuses analytical attention on the components and the directives required to enact the components for a particular outcome.

Using the recipe analogy, it is possible to see at an initial glance that the IIPP omitted crucial ingredients and the instructions on how to mix these ingredients to create a particular outcome. These missing elements, as I discussed in Chapters Two, Five and Seven, meant that the IIPP operated as an ‘incomplete contract’ (Aghion, Bloom, and Van Reenen 2013; Hart and Moore 1988, 1999). Without clear definitions of some of the crucial terms, such as ‘Indigenous intellectual property,’ DKCRC actors were left to define the terms themselves and act as the ‘switchman’ of Indigenous knowledge in their research practices deciding what counts as ‘Indigenous intellectual property’ and what does not. Gatekeeping was possible because the ‘Indigenous intellectual property’ category acted as a ‘filter’ for Indigenous knowledge.
Yet DKCRC actors also enacted the IIPP as guardians and gatecrashers. Both of these modes of enactment involve a degree of sidestepping or challenging the validity of the protocol. In Chapter Seven I explored Jody’s experiences with the IIPP, and suggested that her mode of enactment was akin to a relational form of guardianship because she was intrinsically motivated by altruism. Jody challenged the validity of the principle of distributive justice in clause seven of the IIPP to implant it with the principle of Ngapatji-Ngapatji (the idea of a fifty-fifty split). It was an altruistic act that sought to distribute benefits in a way that more closely resembled the cultural frame of the Indigenous communities she was working with.

Guardianship, however, can also be enacted rationally. As I discussed in Chapter Seven, ‘situational factors’ (Davis, Schoorman, and Donaldson 1997) can guide and direct actors in guardianship practices. For example, the IIPP directed DKCRC actors to submit their research for human ethics clearances. Through submitting an ethics application and considering their own relationships to ‘Indigenous intellectual property’ and the Indigenous people/s they sought to work with, actors enacted the IIPP as rational guardians.

I suggested that actors become gatecrashers when, out of self-interest, they sidestep protocols. In Chapter Seven I suggested that the act of deciding that a protocol does not apply to them and moving on could be constituted as gatecrashing. Rather than seek to engage in a conversation about the protocol (which involves investing time) actors choose an option that meets their own interest (to minimise their own time spent determining if the protocol applies to them).

The typology was presented less as a prescriptive device for labelling enactment, and more as a tool for unpacking and understanding protocol enactment. While the typology may not currently exist in this form in research practices or research ethics, actors already engage in deliberations and reflecting on how protocols more broadly are enacted. As I suggested in Chapter Six, through a discussion on ethics-in-practice, protocols are fluid and are enacted in relation to others. In research contexts this means that multiple protocols are, at times, in play in the practice of research. In Chapter Six, as George (quote 29) suggested, if you behave inappropriately then you do not get very far in your research. One key function of the IIPP was to establish the rules of
engagement, which included the appropriate and acceptable manners of conduct. While George was referring to a pre-existing set of protocols in communities, he was still engaging in reflection on protocols. Actors reflecting on their own enactment of protocols is perhaps more widespread than we, as academics, have considered.

The gatekeeper, guardian and gatecrasher typology provides a technique for actors to pull apart, examine and understand how they enact protocols in their research practices. The typology may assist in theorising and thinking through some of the ethical considerations in the use, storage and commercialisation of Indigenous knowledge. The typology may assist actors with slowing down their thinking, and to contemplate those moments when they have considered or enacted protocols in their research practices, and to more deeply examine the motivations for their own research practices that moves research accountability away from a tick-the-box formula towards a reflexive one.

The Desert Knowledge Story and the brand: entities that entangle

Through on-going conversations and market research that tossed around a number of brands including ‘rangelands knowledge’, the name ‘Desert Knowledge’ was chosen. From these discussions a ‘road show’ was born. Reminiscent of a circus or a medieval travelling show, the road show travelled around the country to gauge reactions to the idea of ‘desert knowledge’ and to sell itself as a product or brand for the desert. After this a number of meetings using scenario planning were undertaken. The aim of the road-show and meetings was to bring together people living and working in the desert regions of Australia, create a consciousness of the things that influence desert living, and to problematise the coastal-desert divisions in policy making. Out of these discussions grew the ‘Desert Knowledge movement’ that gave birth to the Desert Knowledge-Cooperative Research Centre (DKCRC), Desert Knowledge Australia (DKA), the Desert Peoples Centre (DPC), and the ‘desert knowledge’ brand. This story of the ‘desert knowledge’ was re-constructed from interviews with members of the Board, project staff members and through information from the Desert Knowledge Symposium.

In Chapter Eight I suggested two ways that the IIPP became entangled with The Desert Knowledge Story and the ‘desert knowledge’ brand. In the first instance (entanglement
1) the brand and story posited that desert regions are the ‘backyards’ of the State, and ‘remote’ from the powerful coastal regions. This undermined the relationship that people living in the desert have to it as a place or that the narration and branding of Indigenous people as remote undermines their relationships to these places as ‘home’, and in doing so, destabilises the IIPP which seeks to recognise a site-specific knowledge. In the second instance (entanglement 2) the brand and story created a hierarchy of knowledge in the desert. ‘Desert knowledge’ became the pan-knowledge whereby all knowledge was assembled in relation to this category. The IIPP was undermined because Indigenous knowledge, rather than a system of knowledge that existed with its own, became a sub-category of ‘desert knowledge.’

**Strengths, limitations and further research**

This thesis contains a number of strengths and limitations relating to sampling and methods, use of assemblage thought, and the development of a conceptual tool for working through protocol enactment. I consider each of these in turn in this section.

**Sampling and methods**

On a number of occasions I visited Alice Springs, where the DKCRC offices and staff were located to interview DKCRC actors, observe how the DKCRC operated, and to seek to establish working relationships with two Indigenous communities. I was able to speak extensively with the broad range of DKCRC actors, however, I was unable to form working relationships with Indigenous communities to discuss the IIPP. This means that the interpretation of the functions of the IIPP, as discussed in Chapter Five, is biased towards the perceptions of mostly non-Indigenous individual DKCRC researchers. The analysis of the IIPP would have been more robust, and respectful of the principles of Indigenous research and the spirit of the IIPP if I had worked closely with an existing DKCRC project and Indigenous community as they worked through their own interpretations of the IIPP and how they enacted it in practice. This method of study may have assisted to uncover and explore the overlap of pre-existing protocols and the IIPP, and ensure that the IIPP met the particular research needs of Indigenous people/s engaged in DKCRC research. Further research is also required to work with Indigenous people to examine and test protocols that were developed by bureaucracies.
Assemblages — thought that flattens and de-humanises

Assemblage theory provides a framework to understand the entities and relations that contribute to a ‘whole’. In this thesis I used assemblage theory to understand the entities and relations that make up protocols. Assemblage theory offers a critical way of exploring all entities in a protocol. One of the more difficult aspects of assemblage theory, however, is using it beyond a purely descriptive application. Assemblage theory works well for describing the material and expressive aspects of protocols. It also works reasonably well for considering the territoriality and deterritorialisation that occurs through protocols. Yet, assemblage theory flattens geography (Allen 2011; Dittmer 2014; Edensor 2011), which has the potential to remove hierarchies of social order and blur the distinction between pre-existing protocols and organisational protocols. This ordering reminds me a black hole that swallows up, and subsumes, everything that comes into contact with it. In this regard, I used the term ‘entanglement’ as a way to create and maintain boundaries while using assemblage thought.

Assemblage thought’s reliance on the ‘machine’ metaphor risks de-humanising actors and turning them into cogs in a system that lack the autonomy or conscience to engage protocols relationally. My suggestion that assemblage acts as a supra-structure with both rational (machine) and relational (ensemble) ordering was an attempt to overcome some of the de-humanising aspect of assemblage thought.

Through analysing protocol-as-assemblage I arrived at the question ‘so what if protocols are assemblages?’ If particular entities are held together in particular ways as a protocol what does this mean? Does analysing protocol as an assemblage provide more meaningful knowledge than say institutional analysis? Many of the DKCRC actors discussed the IIPP in terms of rules, or the rules that establish research processes. This perception provides an opportunity to apply an institutional analysis framework to protocols and to conceptualise them as protocol-as-institution. In Chapter Three I explained my own reservations about applying an institutional analysis framework to protocols. Through the distinction between ‘informal’ and ‘formal’ institutions, Indigenous pre-existing protocols have the potential to be labelled as ‘informal’ and relegated to the realm of unofficial. This, I believe would be a misrepresentation of the functioning of Indigenous protocols in social life. Withstanding this reservation,
however, an institutional analysis may be better equipped to handle the dynamics of individual and group aspects that occur through the enactment of protocols.

**Development and examination of the conceptual tool – the typology**

In this thesis I presented the gatekeeper, guardian and gatecrasher typology as a conceptual tool to explore how protocols order research practices and Indigenous knowledge, and how actors enact protocol. The strength of this thesis lies in this conceptual tool, and the ability for this tool to be carried in the mind of researchers. As researchers engage in research that seeks to use, store or commercialise Indigenous knowledge, through three simple metaphors they can reflect on their own research practices in real time and place, and modify their practices accordingly. The typology has the potential to transform research relationships. Rather than a protocol written on a piece of paper that may be easily forgotten, the typology is portable, relatively easy for an early-career researchers to understand, and can be used as the basis for a dialogue on research practices.

The typology, however, is dangerous because it suggests that Indigenous and non-Indigenous people can, and do, enact protocols as gatekeepers, guardians and gatecrashers. While the transformative aspects of the typology may assist with building stronger more robust research relationships; if actors use the typology for point scoring or political manoeuvring in their relationships then the typology has the potential to destabilise relationships. In this regard, further research is required to test and examine the typology to see if it has transformative qualities. This testing and examination could include a more thorough examination and analysis of literature on the influences of metaphorical language on human behaviour and practices.

As a practical tool I feel that it works well. However as a theoretical tool I feel that the ethical frames of the typology are theoretically underdeveloped. One of the more difficult aspects of examining protocols, and more broadly codes of ethics, is that the existence of certain rules may indicate a particular ethical influence – such as for consequentialist or deontological ethics, and those same rules may also indicate political interests and influences. The issue of attribution, or attributing the existence of a rule in a protocol to an ethical frame or to a political influence, is difficult. I did not specifically ask DKCRC actors whether they were politically or ethically motivated to establish the
IIPP. They may well have been both. Through this thesis I attempted to explore and explain how contractarian, consequential, deontological and rights-based ethics were assembled through the IIPP, and thus how DKCRC actors enacted them. In some ways I was able to explain how, for example, the IIPP was based on contracts that assembled contractarian ethics, and on this basis leads actors to enact protocols through self-interest, such as gatekeeping and gatecrashing. However, the exploration of the assembling of deontological and rights-based ethics through the IIPP assemblage is deficient. This exploration could have perhaps been achieved through drawing more heavily on the agent-principal and steward-principal discussions of actors in organisations. In this regard, further research is required that examines the varied ethical foundations of protocols.

Additionally, the typology, or at least the development of it, relies on a nuanced discussion of the idea that protocols ‘compel’, ‘coerce’ or ‘request’ actors to practice research in particular ways. These terms relate to the different style and force of instructing or asking someone for something. To ‘request’, for example, information from someone relies on a relational approach. The person being asked is given the option to refuse. To ‘command’ something of someone suggests that there is a rational order at play, and that the person does not have the option of refusing. In Chapter Six, while I moved between these concepts as a way to explore the rational and relational aspects of protocols, I did not engage in an in-depth analysis of the distinction between them. The typology and the analysis of protocols would be greatly strengthened and broadened by a further analysis of the distinctions and similarities between ‘compelling’, ‘coercing’ and ‘requesting’ researchers to engage particular research practices.

Lastly, the gatekeeper, guardian and gatecrasher typology was developed to explore protocol enactment and as a means for suggesting that actors can and move between different styles of enactment. To build the typology I assigned self-interest to the notion of gatekeeping. Assigning the aspect of self-interest to gatekeeping/the gatekeepers was a way to create distinct character types to build the typology and to explore the different types of enactment. There may, however, be gatekeepers (those who are ‘key points in a regulatory chain’ (Kavelin 2008) who do not operate from self-interest. For those instances where someone may appear to be a gatekeeper but do not act in self-interest then in the typology they would be assigned to the category/type of the guardian. They
may well perform exactly the same function, but their motivation is different. The
slippage between each of these enactment types (gatekeeper, guardian and gatecrasher)
is one of the difficulties with the typology and is an area that requires further
exploration.

**Space, place, power and control**

The typology of gatekeeper, guardian and gatecrasher relies on the idea of the ‘gate’. In
Chapter Seven, while I briefly explored the spatial implications of the ‘gate’ metaphor, I
left aside an analysis of the influences and practices of space, power and control on
protocols. Further research is required to explore the influences of space and power on
the production, ordering and enactment of protocols. The analysis could draw on the
extensive discussions in geography and other fields dedicated to the exploration of the
‘production of space’ (Lefebvre 1991; Soja 1996), the analysis of power and control
(Deleuze 1992; Foucault 1972, 1991, 2007). It could also draw specifically upon
Galloway’s (2004) analysis of ‘protological control’, and Castell’s(2011) analysis that
places protocols as the thing which determine the rules that need to be accepted once
an actor is in a particular network.

**Building bridges**

In Chapter Two I provided a minor foray into the critical analysis of protocols in other
fields to provide another route for conceptualising and analysing protocols. As
regulatory tools, protocols exist to control practices in laboratories, medical practices,
computer networks, courts and the military. The analysis of protocols that are used to
regulate access to Indigenous knowledge could draw more heavily on lessons and
understandings more generally about how protocols operate, and how they order
practices and knowledge.

**Conclusion: a final word on protocols**

As I put the finishing touches to this thesis, protocols made the headline in the news.
The Ebola outbreak in West Africa garnered the attention of the media, the medical
profession, political leaders, the health profession, and everyday people hooked into the
growing media frenzy. The news explained how Ebola was transmitted, how many
people were contracting the disease, what decisions were being made at the national and
international levels regarding the transfer of health care works, and what measures
should be put in place to curb the spread of the disease (ABC News 2014; BBC News 2014; Chonghalie 2014; CNN Wire Service 2014; Kelly 2014; Martinez and Wilson 2014). The media reported on the existence of Ebola protocols, breaches of the protocols, and questioned their effectiveness as curbing the spread of the disease (ABC News 2014; BBC News 2014; Chonghalie 2014).

For example, the news article ‘Ebola protocols will not be changed in light of New York doctor case’ reported on the case of a doctor who had contracted Ebola while working for Medicine San Frontier (MSF) in Guinea, West Africa (Chonghalie 2014). The article reported that while MSF had in place an Ebola protocol, the fact that a doctor — who had been working at the epicentre of the Ebola outbreak — had tested positive to Ebola on return to the United States of America raised questions about the effectiveness of the protocol.

Questions about how the effectiveness of protocols will continue to surface. There are likely to be further outbreaks of infectious diseases due to climate change (Altizer et al. 2014; Burge et al. 2014; Harvell et al. 2002; McMichael, Woodruff, and Hales 2006), and the international and national community will need to consider which forms of regulatory measures to enact to halt the spread of these diseases. Protocols may well be considered amongst this suite of regulations, because they provide the rigid arrangements which allows for standardised applications (the rational ordering), and the flexibility for instituting regulation that supports, rather than erodes, autonomy (the relational ordering).

In research contexts with Indigenous peoples, protocols are put in place to allow for commercialisation of knowledge, or to ensure that Indigenous peoples have some form of control over access to their knowledge. Protocols order practices and knowledge in ways that are constrained by the system in which they exist. Likewise, protocol enactment is not uniform for all actors; there are differences in enactment. In order to evaluate the effectiveness of protocols, we need to understand not only how protocols order research practices and knowledge, but also how actors enact them. While the medical protocols discussed in the context of the Ebola outbreak may be a different beast to the protocols established to protect Indigenous knowledge, similar observations can be drawn between how actors responded to both sets of protocols. Actors do not
all enact protocols in the same way. There are a variety of practices of enactment that appear, in some ways, to resemble gatekeeping, guardianship and gatecrashing.

While interviewing George, a DKCRC actor, about the IIPP they made a comment that clearly articulates the tension between the rational and relational order that protocols assemble (and produce).

**George (quote 43):**

Interviewer: If you were to put together a protocol on Indigenous knowledge, what would you put into it? I just ask that given the brief discussion that we’ve just had.

George: I don’t...I think I’d probably give Margaret Raven a call.

Margaret: Ha ha ha ha. Why would you give Margaret Raven a call?

George: Because Margaret Raven has thought a great deal about this and knows more about this than I do. [...] I still do believe in the autonomy of the researchers, the researcher has to have that space and I think any sort of protocol or guideline has to be mindful of that. It has to get worked out locally at an inter-personal level.

George’s suggestion was both a joke, and a serious suggestion. I don’t feel, as the actor did, that I know more about protocols than they do. Far from it, what the research has shown, and as I’ve experienced, is that the study of protocols, and in particular the IIPP, is complex because they embed a contradiction between rational and relational order. This was expressed through the IIPP’s attempt to include provisions on commercialisation and ethical research practices. An expert, one who studies protocols in bureaucracies, may understand how protocols rationally operate and order research practices and knowledge. An expert can also begin to understand, from the outside, how relationships operate; but actors who enact protocols have a relational understanding of how they order their own practices. That kind of expertise, as the actor above suggested, lies with the actors themselves.
Appendix 1. DKCRC Indigenous Intellectual Property Protocol

It is a requirement of DK-CRC’s Centre Agreement that all participants be aware of the current Indigenous Intellectual Property Protocol, as amended from time to time by the Board. We are developing a risk management strategy to weave around this, to provide clear guidelines as to when low risk activities may be able to justify a less rigorous application of the following than high risk ones. [NB. The IIPP refers in places to the clauses and definitions in the Centre Agreement.]

Purpose

This Schedule outlines the strategy that DK-CRC will adopt for dealing with Indigenous Intellectual Property, drawing initially on the terms of the Agreement but able to be updated and improved over time with input from Indigenous stakeholders and with the approval of the Board.

Philosophy

Whilst the DK-CRC is dedicated to improving conditions for all desert Australians, its participants recognise that this will not be achieved without paying attention to the future of desert Indigenous Australians. The general philosophy of DK-CRC is that Indigenous and other interests will be represented in equitable partnership through shared Board and committee memberships – this philosophy of coming together rather than creating slilos has been a strong desire of the Indigenous parties to the proposal and is reflected in the commitments on Board structure in the Agreement’s Clause 9. However, the participants acknowledge that, in cross-cultural contexts, there are particular risks of mishandling intellectual property, and that these warrant special attention. These risks will be addressed through the following practices, which will be subject to on-going re-assessment through the life of the CRC.

Practices

1. Ethics: all Projects which deal with Indigenous Intellectual Property, Indigenous persons or communities will obtain ethical clearance and meet ethical practices which accord to National standards and AIATSIS Guidelines for Ethical Research in Indigenous Studies or such subsequently developed Guidelines as are adopted by the Board under this Protocol. [Clause 34]

2. Practice: Projects which access or depend on Indigenous Intellectual Property must ensure that the owners of that Indigenous Intellectual Property have a clear understanding of the purpose and conditions of the research and its potential use and commercialisation, and that they have given their informed consent. Best endeavours must be used to identify all relevant owners of that Indigenous Intellectual Property in accordance with applicable ethical procedures, or if no such procedures apply, in accordance with procedures approved by the Board.

3. Collection of Indigenous IP: Indigenous Intellectual Property disclosed to researchers in the course of Projects will not be published, Commercialised or in any way exploited unless:
   (a) the written informed consent of the Indigenous person/s who made the disclosures is obtained; and
   (b) the Board has provided prior written approval to the proposed publication, Commercialisation or exploitation.
Appendix 1

Desert Knowledge CRC – Summary Resource Document

4. Use and Storage of Information: Data relating to indigenous IP and personal and other information relating to indigenous persons and communities provided to or collected or created by researchers in the course of Projects:
   (a) will not be collected or held without the prior written informed consent of the indigenous persons and communities involved;
   (b) will be collected and held in accordance with relevant legal, ethical and community/cultural guidelines, including the Information Privacy Principles contained in the Privacy Act 1988 (Cth);
   (c) will not be used for any purpose other than for which it was collected without the prior written informed consent of the indigenous persons that originally provided the information or the prior written informed consent of those person authorised by the relevant communities to make that decision;
   (d) will not be used or published in a manner that is likely to adversely affect the interests of the particular research participants, particular indigenous communities or of indigenous people generally;
   (e) subject to legal or ethical requirements, must be destroyed on the request of the providers of the information or on the request of those who according to traditional law have the authority to make that decision or when specifically required to do so by the Board or by a properly constituted Ethics Committee;
   (f) will not be published in any form that allows for identification of the indigenous persons or communities involved without the specific written approval of the indigenous persons or communities involved; and
   (g) may be published in a form that does not allow for identification of the indigenous persons or communities involved if the initial informed consent obtained from such persons or communities permitted such publication.

5. Confidentiality: a request to observe confidentiality of Indigenous IP by its owners will be respected as an overriding requirement to all other clauses in this agreement; all researchers, including students, must be made aware of and accept this requirement before in engaging in any activity in the CRC. [Clauses 32, 33]

6. Commercialisation Practice: If any research information, research results, research documents or intellectual property relating to indigenous people ("Indigenous Data") collected, created or held as part of the Centre's Activities is required for the purposes of Commercialisation, then the Board will ensure that no Commercialisation takes place until the Board has ensured that the Indigenous people and communities who have an interest in such Indigenous Data have given their informed consent to such Commercialisation.

7. Commercial Benefits: It is recognised that the evaluation of Indigenous IP is difficult in cross-cultural contexts and there is a significant risk that the value of Indigenous IP will be miscalculated. Therefore, to increase the likelihood of equitable benefits from any Commercialisation by the Centre, an amount from the total Commercialisation revenue of the Centre equal to the Company's Participating Share will be allocated into a separate account, which will be used to fund research of a priority to the Indigenous community within the general aims of the CRC. [Clause 28.5] The indigenous members of the Board will establish a group of Indigenous Trustees to manage these funds and determine, with the agreement of the Board, the research priorities for which they will be used.

8. Continual improvement: advice will be taken from Indigenous stakeholders and research within the CRC will be carried out to enable ongoing development of ethical standards for defining and handling indigenous IP, and for improving the ways in which the formal scientific method interacts with local indigenous knowledge. The Board may update this Schedule to reflect these improvements.

[July 2003]
Desert Knowledge CRC Indigenous Intellectual Property Protocol

(the typed text of the IIPP as included above in the .pdf copy)

It is a requirement of DK-CRC’s Centre Agreement that all participants be aware of the current Indigenous Intellectual Property Protocol, as amended from time to time by the Board. We are developing a risk management strategy to weave around this, to provide clear guidelines as to when low risk activities may be able to justify a less rigorous application of the following than high risk ones. [NB. The IIPP refers in places to the clauses and definitions in the Centre Agreement.]

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Philosophy
Whilst the DK-CRC is dedicated to improving conditions for all desert Australians, its participants recognise that this will not be achieved without paying attention to the future of desert Indigenous Australians. The general philosophy of DK-CRC is that indigenous and other interests will be represented in equitable partnership through shared Board and committee memberships – this philosophy of coming together rather than creating silos has been a strong desire of the indigenous parties to the proposal and is reflected in the commitments on Board structure in the Agreement’s Clause 9. However, the participants acknowledge that, in cross-cultural contexts, there are particular risks of mishandling intellectual property, and that these warrant special attention. These risks will be addressed through the following practices, which will be subject to on-going reassessment through the life of the CRC.

Practices
1. Ethics: all Projects which deal with Indigenous Intellectual Property, Indigenous persons or communities will obtain ethical clearance and meet ethical practices which accord to National standards and AIATSIS Guidelines for Ethical Research in Indigenous Studies or such subsequently developed Guidelines as are adopted by the Board under this Protocol. [Clause 24]

2. Practice: Projects which access or depend on Indigenous Intellectual Property must ensure that the owners of that Indigenous Intellectual Property have a clear understanding of the purpose and conditions of the research and its potential use and commercialisation, and that they have given their informed consent. Best endeavours must be used to identify all relevant owners of that Indigenous Intellectual Property in accordance with applicable ethical procedures, or if no such procedures apply, in accordance with procedures approved by the Board.
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   (b) will be collected and held in accordance with relevant legal, ethical and community/cultural guidelines, including the Information Privacy Principles contained in the Privacy Act 1988 (C’th);
   (c) will not be used for any purpose other than for which it was collected without the prior written informed consent of the Indigenous persons that originally provided the information or the prior written informed consent of those persons authorised by the relevant communities to make that decision;
   (d) will not be used or published in a manner that is likely to adversely affect the interests of the particular research participants, particular Indigenous communities or of Indigenous people generally;
   (e) subject to legal or ethical requirements, must be destroyed on the request of the providers of the information or on the request of those who according to traditional law have the authority to make that decision or when specifically required to do so by the Board or by a properly constituted Ethics Committee;
   (f) will not be published in any form that allows for identification of the Indigenous persons or communities involved without the specific written approval of the Indigenous persons or communities involved; and
   (g) may be published in a form that does not allow for identification of the Indigenous persons or communities involved if the initial informed consent obtained from such persons or communities permitted such publication.

5. Confidentiality: a request to observe confidentiality of Indigenous IP by its owners will be respected as an over-riding requirement to all other clauses in this agreement; all researchers, including students, must be made aware of and accept this requirement before in engaging in any activity in the CRC. [Clauses 32, 35]

6. Commercialisation Practice: If any research information, research results, research documents or intellectual property relating to Indigenous people (“Indigenous Data”) collected, created or held as part of the Centre’s Activities is required for the purposes of Commercialisation, then the Board will ensure that no Commercialisation takes place until the Board has ensured that the Indigenous people and communities who have an interest in such Indigenous Data have given their informed consent to such
Commercialisation.

7. Commercial Benefits: It is recognised that the evaluation of Indigenous IP is difficult in cross-cultural contexts and there is a significant risk that the value of Indigenous IP will be miscalculated. Therefore, to increase the likelihood of equitable benefits from any Commercialisation by the Centre, an amount from the total Commercialisation revenue of the Centre equal to the Company’s Participating Share will be allocated into a separate account, which will be used to fund research of a priority to the indigenous community within the general aims of the CRC. [Clause 28.5] The Indigenous members of the Board will establish a group of Indigenous Trustees to manage these funds and determine, with the agreement of the Board, the research priorities for which they will be used.

8. Continual improvement: advice will be taken from indigenous stakeholders and research within the CRC will be carried out to enable ongoing development of ethical standards for defining and handling Indigenous IP, and for improving the ways in which the formal scientific method interacts with local indigenous knowledge. The Board may update this Schedule to reflect these improvements.

[July 2003]
### Appendix 2. Desert Knowledge CRC Partners: 2004 to 2010

<table>
<thead>
<tr>
<th>Type of Partner</th>
<th>Name of the Organisation</th>
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<tbody>
<tr>
<td><strong>Core Partners</strong></td>
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<td>Central Land Council</td>
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<tr>
<td></td>
<td>Charles Darwin University</td>
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<td></td>
<td>Commonwealth Scientific Industrial Research Organisation (CSIRO)</td>
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<td>Curtin University of Technology</td>
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<tr>
<td></td>
<td>Desert Peoples Centre (Centre for Appropriate Technology and Batchelor Institute of Indigenous Tertiary Education)</td>
</tr>
<tr>
<td></td>
<td>Government of Western Australia (WA Department of Agriculture)</td>
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<td></td>
<td>Northern Territory Government</td>
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<td></td>
<td>Office of Indigenous Policy Coordination</td>
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<tr>
<td><strong>Centre Partners</strong></td>
<td>Griffith University</td>
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<tr>
<td></td>
<td>James Cook University</td>
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<tr>
<td></td>
<td>Murdoch University</td>
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<tr>
<td></td>
<td>Newmont Australia</td>
</tr>
<tr>
<td></td>
<td>The University of South Australia</td>
</tr>
<tr>
<td><strong>Moved to Core Partner in 2006-07</strong></td>
<td>Government of Western Australia (WA Department of Conservation and Land Management)</td>
</tr>
<tr>
<td><strong>Left 2006-07</strong></td>
<td>SingTel Optus Pty Ltd</td>
</tr>
<tr>
<td><strong>Associate Partners</strong></td>
<td>Flinders University (Centre for Remote Health)</td>
</tr>
<tr>
<td></td>
<td>NSW Agriculture (in 2003-2004), NSW Primary Industries (named changed 2004-05)</td>
</tr>
<tr>
<td></td>
<td>South Australian Department of Water, Land and Biodiversity Conservation</td>
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<td></td>
<td>Southern Cross University</td>
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<td>The Australian National University</td>
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<td>The University of Adelaide</td>
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<td>The University of Queensland</td>
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<td>The University of Western Australia</td>
</tr>
<tr>
<td></td>
<td>University of Wollongong</td>
</tr>
<tr>
<td><strong>Associate Partner until 2005-06</strong></td>
<td>Tapatjatjaka Community Government Council (then becomes an Affiliate Partner)</td>
</tr>
<tr>
<td><strong>Left 2004-06</strong></td>
<td>Bowerbird Enterprises Pty Ltd (left in 2004-05)</td>
</tr>
<tr>
<td></td>
<td>Australian Inland Energy and Water (left 2005-06)</td>
</tr>
<tr>
<td><strong>Affiliate Partners</strong></td>
<td>Australian Institute of Aboriginal and Torres Strait Islander Studies</td>
</tr>
<tr>
<td><strong>Joined 2005-06</strong></td>
<td>Waltja Tjutangku Palyapayi Aboriginal Corporation</td>
</tr>
<tr>
<td><strong>Joined 2006-07</strong></td>
<td>Indigenous Australian Foods Ltd</td>
</tr>
<tr>
<td></td>
<td>Robins Foods</td>
</tr>
<tr>
<td></td>
<td>Tangentyere Council</td>
</tr>
<tr>
<td></td>
<td>Tapatjatjaka Community Government Council</td>
</tr>
</tbody>
</table>

Appendix 3. Maps of DKCRC Research Locations

DKCRC Research Locations 2003-2004

(Source: Desert Knowledge CRC 2004:15)

DKCRC Research Locations 2004-2005

(Source: Desert Knowledge CRC 2005:13)
DKCRC Research Locations 2005-2006

(Source: Desert Knowledge CRC 2006:15)

DKCRC Research locations in 2006-2007

(Source: Desert Knowledge CRC 2007:16)

DKCRC research locations in 2007-2008
Appendix 3

DKCRC Research locations in 2008-2009

(Source: Desert Knowledge CRC 2008:14)

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DKCRC Research locations in 2009-2010

(Source: Desert Knowledge CRC 2010b:12)
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Appendix 5. List of Desert Knowledge CRC Reports


Appendix 6. The First Telling: ‘The Desert Knowledge Story’

The Desert Knowledge Story

Over two-thirds of Australia is arid or semi-arid. This is the ‘desert’ of Australia’s inland. The surface, the bush, is a region of low and variable rainfall, where droughts and floods are the norm, population is sparse, and conventional agriculture is limited. These Australian deserts are not, however, a barren wilderness. They support a population of 1,250,000 people (larger than the ACT or Tasmania and nearly 80% of this population is Indigenous). Desert Australia is valued for its unspoiled environments, the new products it provides for the nation, and its remarkable cultural and historical variety.

Until recently, there was no university or other body to coordinate research activities within Australia’s desert regions. There were several reasons for this. The dispersed population means limited critical mass for many purposes, not just research. Scant attention was paid to desert regions which are the ‘backyards’ of the state jurisdictions they spread across — resources are focused on the population-dense southeast.

However, Australia needs people living securely in these lands to service its major industries and to manage these vast areas of national significance. Livelihood security is a constant challenge for our desert communities. Rural and regional economies have suffered continual decline in recent years, and the cost of service delivery has continued to increase. Significantly, population predictions indicate a slow increase in peri-urban Indigenous people seeking employment in the next 15 years, investing challenges of governance. Important solutions to these issues fall when they do not address the special environmental, social, economic and cultural features of desert Australia.

These challenging desert features have driven innovation in everything from technology to service delivery. But often in a poorly consolidated way. This is equally true internationally, where one-third of the world’s population lives on the one-third of the world’s land that is a desert.

Several years ago, a diverse group of people — from the private and public sectors, the Aboriginal and non-Aboriginal communities — came together in Alice Springs to address these issues. The Aboriginal community’s vision was of a Desert People’s Centre, a place of Indigenous teaching and knowledge-sharing. Others brought research, technology and business skills to a similar vision for a place of learning for all desert peoples together.

Following years of intense discussions and lobbying, these shared visions are becoming reality. The Desert Knowledge Practice is talking shape on the outskirts of Alice Springs. The precinct will host the Desert Knowledge Cooperative Research Centre and Desert Knowledge Australia (DKA), a Northern Territory Government initiative to tackle the challenges of desert living. From these parcel beginnings, Desert Knowledge is reaching out to desert regions across the continent, and indeed the world.

One keyword that crystallises this synergy of skills and knowledge is the new Desert Knowledge Cooperative Research Centre (CRC). The Centre comprises the DKA and CRC, but draws on a skills base of academics, researchers, technicians and business people with whom it does not exist in any one partner or organisation. It provides the opportunity for knowledge to be shared between and across jurisdictions with a depth of research integrity unmatched elsewhere. Instead, Australia’s politically stable and technologically sophisticated desert regions can now become the global focus of new science and practice of sustainable desert living.

The CRC is aiming to place knowledge into the hands of those who need it while developing new export opportunities for Australia’s desert knowledge.

(Source: Desert Knowledge CRC 2005:4-5. Green text boxes added by Raven)
Appendix 7. Signposting ‘The Desert Knowledge Story’ 2003-2010:

The analysis of the different iterations of “The Desert Knowledge Story” (as it appeared in the DKCRC Annual Reports) was undertaken using Klein’s ‘Characteristics of Story.’

Klein’s Characteristics of Story

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Explanation of the characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agents</td>
<td>The people who figure in the story</td>
</tr>
<tr>
<td>Predicaments</td>
<td>The problem the agents are trying to solve</td>
</tr>
<tr>
<td>Intentions</td>
<td>What the agents plan to do</td>
</tr>
<tr>
<td>Actions</td>
<td>What the agents do to achieve their intentions</td>
</tr>
<tr>
<td>Objects</td>
<td>The tools the agents will use</td>
</tr>
<tr>
<td>Causality</td>
<td>The effects (both intended and unintended) of carrying out action</td>
</tr>
<tr>
<td>Context</td>
<td>The many details surround the agents and actions</td>
</tr>
<tr>
<td>Surprises</td>
<td>The unexpected things that happen in the story</td>
</tr>
</tbody>
</table>

(Source: Klein 1999)

For example, each story was read and then each section sentence was considered in terms of Klein’s characteristics. Where a particular characteristic appeared associated to a section of text, it was assigned to the text. The tables in the rest of this Appendix show the analysis undertaken for each of the iterations of ‘The Desert Knowledge Story’ as it appeared in the DKCRC Annual Reports.

The Desert Knowledge Story 2003-04

G. Context: desert characteristics

Over two-thirds of Australia is arid or semiarid. This is the ‘desert’ of Australia’s inland: the outback, the bush. It is a region of low and variable rainfall, where droughts and floods are the norm, population is sparse, and conventional agriculture is limited. These Australian deserts are not, however, a barren wilderness. They support a population of 570,000 people (larger than the ACT or Tasmania) and one-fifth of this population is Indigenous. Desert Australia is valued for its unspoiled environments, the raw products it provides for the nation, and its remarkable cultural and historical variety.

B. Predicament: lack of coordination in desert research & scant attention on desert regions

Until recently, there was no university or other body to coordinate research activities within Australia’s desert regions. There were several reasons for this. The dispersed population meant limited critical mass for many purposes, not just research. Scant attention was paid to desert regions which are the ‘backyards’ of the state jurisdictions they spread across — resources are focused on the population-dense seaboard.

C. Intentions. Place of teaching, learning & knowledge sharing - Desert Knowledge Precinct

Several years ago, a diverse group of people — from the private and public sectors, the Aboriginal and non-Aboriginal communities — came together in Alice Springs to address these issues. Others brought research, technology and business skills to a similar vision for a place of learning for all desert peoples together.

Following years of intense discussions and lobbying, these shared visions are becoming reality. The Desert Knowledge Precinct is taking shape on the outskirts of Alice Springs. The precinct will host the Desert Peoples Centre (DPC) and Desert Knowledge Australia (DKA), a Northern Territory Government initiative to tackle the challenges of desert living.

E. Objects Desert Knowledge CRC – sharing knowledge across space/place

One keystone that cements this synergy of skills and knowledge is the new Desert Knowledge Cooperative.

A. Agents & D. Actions: People meeting in the desert

Causality: the effects (both intended and unintended) of carrying out action.
B. Predicament: imported solutions fail

However, Australia needs people living securely in these lands to service its major industries and to manage those vast areas of national significance. Livelihood security is a constant challenge for our desert communities [objects]. Rural and regional economies have suffered continuous declines in recent years, and the cost of service delivery has continued to increase. Significantly, population predictions indicate a 34% increase in work-aged Indigenous people seeking employment in the next 15 years, creating challenges of governance [context][+surprises]. Imported solutions to these issues fail when they do not address the special environmental, social, economic and cultural features of desert Australia [predicament].

G. Context: desert features driving innovation

These challenging desert features have driven innovation in everything from technology to service delivery, but often in a poorly consolidated way [predicament]. This is equally true internationally, where one-sixth of the world’s population lives on the one-third of the world’s landmass that is desert [context].

E. Objects: DKCRC well place

The DKCRC is admirably placed to capitalise on these opportunities [objects], to improve the livelihoods of remote desert communities and to develop new export opportunities for Australia’s desert knowledge [intentions][+surprise4][+surprise 5].

Research Centre. The Centre complements the DPC and DKA, but draws on a skills base of academics, researchers, technicians and business people which does not exist in any one partner or organisation [objects][+surprise3]. It provides the opportunity for knowledge to be shared between and across jurisdictions with a depth of research integrity unmatched elsewhere. Indeed, Australia’s politically stable and technologically sophisticated desert regions can now become the global focus of a new science and practice of sustainable desert living [context].

C. Intentions: improve livelihoods & export of desert knowledge

The DKCRC is admirably placed to capitalise on these opportunities [objects], to improve the livelihoods of remote desert communities and to develop new export opportunities for Australia’s desert knowledge [intentions][+surprise4][+surprise 5].

(Source: Desert Knowledge CRC 2004:4-5)
The Desert Knowledge Story continues…: 2004-05

The outback, the bush, desert Australia. Call it what you like, arid or semi-arid regions make up more than two-thirds of our continent. There is much we value about these heartlands: their relatively unspoilt environments, the products they provide for the nation, and their extraordinary cultural and historical variety. We need people living securely in the desert to manage these values for today and for future generations.

Desert Australia supports almost 600 000 people. This sparse and mobile population, larger than that of Tasmania or the ACT, contributes significantly to the nation’s wealth through tourism, mining, land management, primary industry, service delivery and a range of smaller sectors. Our desert population is young and growing rapidly; one-fifth is Indigenous.

The diverse knowledge these Australians have about prospering in the inland is what we call ‘desert knowledge’. It’s this local, experiential knowledge that must be shared and developed if people living in the desert are to meet the challenges facing them and deliver value to Australia:

- how to grow to encourage self-reliant regional economic development
- how to reduce desert Australia’s call on the public purse
- how to build sustainable and equitable health and education services
- how to find and keep workers who can sustain services and create wealth through individual and collective enterprise
- how to compete with coastal regions for resources and the attention of decision-makers

Imported answers to such questions invariably fail when they do not address the unique environmental, social and cultural features of desert Australia.

In Alice Springs, towards the end of the millennium, a diverse group of people — from businesses to governments, Aboriginal and non-Aboriginal organisations — set to work on home-grown solutions.

The Aboriginal community wanted a place of Indigenous teaching and knowledge sharing: a Desert Peoples Centre. Others brought research, technology, business and networking skills to a similar vision for a centre of learning for all desert peoples. The Northern Territory Government initiated Desert Knowledge Australia, a national networking organisation, to tackle the challenges of desert living.

Complementing these ideas was the plan for a centre that would, for the first time, coordinate research activities within Australia’s desert regions: a virtual research hub linking partners across the nation and overseas that could draw on a skills base of academics, researchers, technicians and business people which did not exist in any one partner or organization. The Desert Knowledge Cooperative Research Centre (DK-CRC) would create opportunities for sharing knowledge between and across jurisdictions with an unmatched depth of research integrity.

The joint vision which emerged from years of intense discussions and lobbying, the Desert Knowledge Precinct, is now taking shape at the southern entrance to Alice Springs. As the DK-CRC prepares to move onto the Precinct, its implementation of a suite of research projects bringing local solutions for the sustainable future of desert Australia a big step closer. Linking Aboriginal and other local knowledge with the latest science, some of these projects are already creating economic opportunities for desert people and making a difference to remote Indigenous communities.

For example, among many developments:

- We have made significant progress in understanding the market value chains that could support a bush food industry.
- We are working on new approaches to the delivery of accessible services in remote areas, expertise that will not only help here, but will also be marketed overseas.
- We are beginning to understand how to help Aboriginal people to engage better in remote regional economies.

(Source: Desert Knowledge CRC 2005:4-5)
The Desert Knowledge Story continues…: 2005-06

The OUTBACK, THE BUSH, DESERT Australia. Call it what you like, arid or semi-arid regions make up more than two-thirds of our continent. There is much we value about these heartlands: their relatively unspoilt environments, their exquisite beauty, the products they provide for the nation, and their extraordinary cultural and historical variety [context]. We need people living securely in the desert to manage these values for today and for future generations [intentions].

Desert Australia supports almost 600,000 people. This sparse and mobile population, larger than those of Tasmania or the ACT, contributes significantly to the nation’s wealth through tourism, mining, land management, primary industry, service delivery and a range of smaller sectors. Our desert population is young and growing rapidly; one fifth is Aboriginal [objects] [agents].

The diverse knowledge these Australians have about prospering in the inland is legitimate. It is this local, experiential knowledge that must be shared and developed if people living in the desert [objects] are to meet the challenges facing them and deliver solutions to Australia [intentions]:

➜ how to grow to encourage self-reliant regional economic development
➜ how to build sustainable and equitable health and education services
➜ how to find and keep workers who can sustain services and create wealth through individual and collective enterprise
➜ how to compete with coastal regions for resources and the attention of decision-makers.

In particular [agents] to such questions invariably fail when they do not address the unique environmental, social and cultural features of desert Australia [intentions]<+surprises1b>.

In Alice Springs, in the late 1990s, a diverse group of people — from businesses to governments, Aboriginal and non-Aboriginal organisations — [agents] set to work on home-grown solutions [action] [objects/intentions]<+surprises6>. The Aboriginal community wanted a place of Aboriginal teaching and knowledge sharing: a Desert Peoples Centre [agents] [intentions]. Others brought research, technology, business and networking skills to a similar vision for a centre of learning for all desert peoples [agents] [intentions]. The Northern Territory Government initiated Desert Knowledge Australia, a national networking organisation, to tackle the challenges of desert living [agents][intentions].

Complementing these ideas was the plan for a centre that would, for the first time, coordinate research activities within Australia’s desert regions: a virtual research hub linking partners across the nation and overseas [intention] that could draw on a skills base [objects] of academics, researchers, technicians and business people which did not exist in any one partner or organisation [agents]. The Desert Knowledge CRC would create opportunities for...
The Desert Knowledge Story continues…: 2006-07 (over two pages)

THE YEAR 2006 WAS PROCLAIMED the ‘International Year of Deserts and Desertification’ by the United Nations and the ‘Year of the Outback’ by the Australian Government. The world’s deserts are sources of huge social, cultural and economic capital, and policymakers acknowledge the place that desert dwellers and desert businesses hold in shaping, maintaining and growing this capital.

Australia maintains an ambivalent relationship with its deserts. The area we call ‘the outback’ or ‘the bush’—those arid and semi-arid regions that make up more than two-thirds of the continent—is valued for its unspoilt environments, exquisite beauty, and cultural and historic variety. Enabling people to live in those environments and manage those values for today and for future generations is difficult. This is where desert knowledge comes in.

The 70% of Australia that is desert, supports almost 3% of the nation’s population. This sparse and mobile population, larger than the populations of Tasmania and the ACT, contributes significantly to the nation’s wealth through tourism, mining, land management, primary industries, service delivery and a range of smaller sectors. Our desert population is young and growing rapidly, and one-fifth is Aboriginal.

‘Desert Knowledge’ is the term for the diverse knowledge these Australians have about prospering in remote and often harsh environments. This local, experiential knowledge must be shared and developed people living in the desert are to meet the challenges facing them and deliver solutions to Australia. There are key questions facing desert people:

How do we grow and encourage self-reliant regional economic management?
How do we build sustainable and equitable health and education services?

This was a watershed year. We’re proud of the quality of research carried out, its social inclusivity, its application to overseas as well as domestic markets and the growth in capacity among desert dwellers.

In Alice Springs in the late 1990s a diverse group of people—from business and government, Aboriginal and non-Aboriginal organisations—set to work on home-grown solutions. The Aboriginal community wanted a place of Aboriginal teaching and knowledge sharing: a Desert Peoples Centre. Others brought research, technology, business and networking skills to a similar vision for a centre of learning for all desert peoples. The Northern Territory Government initiated Desert Knowledge Australia as a statutory corporation with a national and international mandate to create opportunities and meet desert challenges through desert knowledge and to manage the Desert Knowledge Precinct. Complementing these ideas was the plan for a centre that would, for the first time, coordinate research activities within Australia’s desert regions: a virtual research hub linking partners across the nation and overseas.

The Desert Knowledge Precinct—the physical expression of the joint vision—is located at the southern entrance to Alice Springs.

The ‘Cattle and Country’ project attracted external funding from the Indigenous Land Corporation, Meat and Livestock Australia, and the Western Australian Government. The project will complete a participatory research evaluation of the Aboriginal Pastoral Program (APP) in the Northern Territory and the Kimberley Indigenous Management Support Service in Western Australia, and a review of Aboriginal pastoral employment initiatives across northern and central Australia.

The precinct’s Business Innovation Centre became operational in May 2007, and is now the home to DKCRC and Desert Knowledge Australia, and is the headquarters of the Desert Peoples Centre. The precinct is close to Yirara College, CSIRO and the NT Government’s Arid Zone Research Institute.

Our move into the new precinct marked a major step in our research journey. From some 40 initial projects at our launch in 2003/04, we now have seven core project areas, bringing local solutions for the sustainable future.
of desert Australia a big step closer [causality]. These projects link Aboriginal and other local knowledge with the latest science [objects], and some are already creating economic opportunities for desert people and making a difference to remote Aboriginal communities. For example [+surprises]:

➜ The bush tomato (desert raisin) horticulture trial continued to examine the plant’s horticulture in order to isolate the variables and encourage the plant’s growth in a cultivated setting [causality]. Planning the next stage of the project—the production of commercially grown tomatoes in remote communities [intention] [+surprises]—began in earnest this year [action]. The benefits will include economic prosperity for remote Aboriginal horticulturalists, continued secure supply from the desert, and the cultural knowledge that the town camps mobility study, undertaken by Tangentyere Council with support from the Centre for Remote Health [agents], was influential in Tangentyere’s discussions on the future of these settlements [causality]. The study informed policymakers about the true populations of these settlements. It also enabled Tangentyere researchers to develop an in-house research capability, and a number of the study’s researchers worked for the Australian Bureau of Statistics on the 2006 Census [causality].

➜ 21st Century PastoralismTM collaborated with a wide range of partners on the Walk-Over-Weighing (WOW) system [action]. WOW combines existing systems for weighing ear-tagged livestock as they walk through a race, allowing the automatic draft of animals that have reached market weight. Combined with our telecommunications research, the whole process can be managed from the station homestead [causality].

(Source: Desert Knowledge CRC 2007:4-5)
Appendix 7

The Desert Knowledge Story: 2007-08 (over two pages)

**DESERt KNOWLEDGE IS THE ACCUMULATED wisdom held by desert-dwelling Australians:** knowledge about how to live sustainably and to prosper in these remote and often variable environments. The local, experiential knowledge held by desert people must be developed and shared if other people living in the desert—both here in Australia and overseas—are to meet them and deliver solutions to the issues of climate change and global economics that so often buffet desert economies.

**DPC, DKA and DKCRC**

In Alice Springs in the late 1990s a diverse group of people set to work on recording and systemising home-grown solutions under the heading of ‘desert knowledge’. The Aboriginal community worked towards a place of teaching and knowledge sharing: a Desert Peoples Centre (DPC). Others brought research, technology, business and networking skills to a similar vision for a centre of learning for all desert peoples. The Northern Territory Government supported the establishment of Desert Knowledge Australia (DKA), a national networking and partnership brokering organisation, to tackle the challenges of desert living. Finally, following a huge collaborative effort, the Australian Government backed the first Desert Knowledge Cooperative Research Centre.

These organisations are now housed at the Desert Knowledge Precinct in Alice Springs. The precinct, managed by DKA, is a $30 million investment by the Northern Territory and Australian governments, creating a hub of collaborating organisations. The work at the precinct is focused on providing solutions to four critical questions that were posed by the original desert knowledge development group:

- How do we grow and encourage self-reliant regional economic management?
- How do we attract and keep workers who can sustain services and create wealth through individual and collective enterprise?
- How do we compete with coastal regions for resources and the attention of decision makers?
- How do we attract and keep workers who can attract and keep workers who can attract and keep workers who can compete with coastal regions for resources and the attention of decision makers?

Achieving our shared vision

This fifth year of the DKCRC saw huge progress towards achieving that vision of a multidisciplinary research centre employing desert researchers providing local solutions to national problems. Our key achievements in 2007/08 are listed below.

- An economic analysis of the primary health care benefits gained from land management found that helping Aboriginal people to remain ‘on country’ could cut health bills by up to $2 million for a community of 1200 people over a 25-year period. The Livelihoods inLand analysis, the first of its kind, calculated savings through reductions in heart disease, diabetes and kidney disease.

- Our researchers were invited to present to and comment on the work of state and territory government departments and agencies in several jurisdictions. Desert knowledge researchers are having input at the highest policy-setting levels.

- A ‘Value Chain Walk-Through’ capacity-building activity allowed Aboriginal bush food producers to follow the physical journey of bush tomatoes from harvest to wholesaler, processor, manufacturer, distributor, retailer and finally to the restaurant table. A professional DVD and book of the walk-through dissemination of the knowledge gained. A horticulture trial examined whether bush tomatoes can be successfully commercially grown in the desert. Our research proved that plants grown from the wild have extreme yield variability (50–500 grams per plant), different growing characteristics and high variance in fruit size and flavour.
Engagement of the pastoral industry took place through the development of WaterSmart Pastoralism™ and Remote Livestock Management Systems (RLMSs). Prototype RLMSs that consist of WOW (‘walk-over-weighing’, developed in collaboration with the Sheep CRC), radio frequency identification tags, auto-drafting, telemetry and video surveillance, were displayed in a series of field days at remote pastoral stations. Not only were the field days attended by hundreds of pastoralists, they were also disseminated through ABC Radio’s Country Hour and in print media such as Country Life and the Centralian Advocate.

Our Social Science project delivered employment and training to Aboriginal Nintiringtjaku workshops. Several DKCRC core projects now engage Aboriginal Nintiringtjaku-trained researchers on community-based research work. Another focus for the program was to update our Aboriginal Intellectual Property Protocol. An expert in IP law and Aboriginal knowledge was engaged, and nine plain-English briefing papers were developed. The revised protocol (renamed the ‘Aboriginal Knowledge and Intellectual Property Protocol’) clarifies how both Aboriginal knowledge and Aboriginal intellectual property group also wrote a submission to the United Nations Report of the Secretariat on Indigenous Traditional Knowledge.

Our report on staff attraction and retention was launched through DKA’s video network. The report has already been hugely influential, with copies requested by governments, mining companies, Aboriginal organisations and desert enterprises.

We were invited to edit a special issue of flagship publication The Rangeland Journal. Mark Stafford Smith, Craig James, Murray McGregor and Jan Ferguson represented the CRC, with 18 peer-reviewed articles published. Our output of research papers and working papers continued to grow.

In our five-year history not all projects have achieved their intended outcomes. In the CRC’s first years, during the period of theme-based research, two projects in particular delivering outcomes in natural resource management. However, we quickly hit problems: key partners underwent internal restructures resulting in realignment of their operating focus; this in turn resulted in the lack of a partner with the capacity to champion the project; and we experienced greater than anticipated problems attracting researchers to remote communities.

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The Desert Knowledge CRC is planning the next stage of the desert knowledge story, having commenced planning for the successful completion of this CRC and preparing a re-bid to the Australian Government for a new CRC. This new CRC will further reflect and respond to the demands of desert end users, building on the tradition of desert knowledge established by those central Australian pioneers a decade ago.
The Desert Knowledge Story: 2008-09

The Desert Knowledge Story: 2009-10

THE DESERT KNOWLEDGE MOVEMENT HAS a national focus, but its genesis lies in central Australia in the late 1990s. Australia’s desert settlements were, at that time, beset by numerous problems: a systemic failure in the supply-side delivery of services; poor educational attainment and transition to paid employment; poor infrastructure that led to repeated failures in businesses; the extraction of wealth and resources with little apparent return to the source communities. Paradoxically, ‘the bush’ continued to be held in awe and esteem by the same nation that failed to nurture and sustain it.

The Desert Knowledge Movement has has many problems: a systemic failure in the supply-side delivery of services; poor educational attainment and transition to paid employment; poor infrastructure that led to repeated failures in businesses; the extraction of wealth and resources with little apparent return to the source communities.

The deserts of Australia cover almost three-quarters of the continent and are home to approximately 500,000 people, the majority of whom are long-term residents. The deserts generate:

- gross revenue of about $90 billion by businesses and organisations
- per capita gross regional product that is about 1.5 times more than that of the national figure
- total regional exports of about $51.2 billion while the total regional import estimate is only $26.3 billion.

The challenge of building on these skills in order to address the litany of disadvantage became the focus of a group of people who set to work recording and systemising home-grown solutions. The Aboriginal community worked towards a place that would become home-grown solutions.

Others brought research, technology, business and networking skills to a similar vision for a centre of learning for all desert peoples. The Northern Territory Government initiated Desert Knowledge Australia, a national networking organisation that creates critical mass for desert organisations. Finally, the Australian Government backed the first Desert Knowledge Cooperative Research Centre (DKCRC) for a period of seven years.

However, every Cooperative Research Centre's tenure is limited by the terms agreed with the Australian Government. At the end of its fifth year the DKCRC embarked on a bid to gain funding for a new seven-and-a-half year Centre. Unfortunately, in May 2009 this bid was declined. Our partners were confronted with the question of how to continue the work developed by the DKCRC over the previous six years.

Two options were clear: accelerate planning for a Desert Institute (an enduring research institution for desert Australia, which had been discussed since the early days of DKCRC planning) or wait for a new CRC round to open. While consultations for a Desert Institute were in full swing, an unexpected new CRC round was opened, in May 2009.

Our partners seized this opportunity but recognised that the DKCRC would have changed. The partners also recognised that the drivers of remote economic participation are not necessarily encompassed by environmental boundaries; that is, the problems of ‘the desert’ extend to remote communities across the nation.

Rainfall itself is not an indicator of a community’s ability to generate livelihoods or of a business’s ability to create wealth, add value and operate sustainably.

The outcome of this work was a bid for a new CRC for Remote Economic Participation (CRC-REP). The CRC-REP will build on the business, academic, social and cultural capital created by the DKCRC, using this as a springboard to further research in three program areas: ‘Enterprise Development’, and ‘Investing in People’. The CRC-REP bid was lodged in August 2009.

The desert knowledge story is a story created by desert people. Like them, it is an evolving adaptive story. In 2009–10 the Desert Knowledge CRC will conclude the work that its partners and participants have carried out in the preceding years, but the desert knowledge story itself is far from over. The knowledge we have gained has already changed the face of desert Australia; the proposed CRC-REP is a further step towards our goal of sustainable, culturally appropriate livelihoods for Australia’s desert people.

(Source: Desert Knowledge CRC 2009: 4)

The Desert Knowledge Story: 2009-10

THE CLOSURE OF THE DESERT KNOWLEDGE Cooperative Research Centre (DKCRC) offered a great opportunity to examine the phenomenon we encountered with the Australian Government. At the end of its fifth year the DKCRC embarked on a bid to gain funding for a new seven-and-a-half year Centre. Unfortunately, in May 2009 this bid was declined.

The Desert Knowledge Movement has been beset by numerous problems: a systemic failure in the supply-side delivery of services; poor educational attainment and transition to paid employment; poor infrastructure that led to repeated failures in businesses; the extraction of wealth and resources with little apparent return to the source communities.

However, every Cooperative Research Centre's tenure is limited by the terms agreed with the Australian Government. At the end of its fifth year the DKCRC embarked on a bid to gain funding for a new seven-and-a-half year Centre. Unfortunately, in May 2009 this bid was declined.

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The knowledge we have gained has already changed the face of desert Australia; the proposed CRC-REP is a further step towards our goal of sustainable, culturally appropriate livelihoods for Australia’s desert people.
refer to in this and previous annual report executive summaries as 'the desert knowledge story'. What was this story? What was its genesis, and how far had it come by 30 June 2010 – the final day of the DKCRC’s operation? Were things better than before the DKCRC existed and, if they were, in what ways were they better?[context]

The desert knowledge story began in central Australia in the late 1990s [context]. Australia’s desert settlements were, at that time, beset by problems: a systemic failure in the delivery of services; local knowledge not being used in decision-making in far off capitals; poor infrastructure that led to repeated failures in businesses; the extraction of wealth and resources with little apparent return to the source communities [predicament].

It was not all bad news. Australia’s desert regions, which cover almost two-thirds of the continent, are home to around 600,000 people, the majority of whom are long-term residents [context][agents]. This population is young, is growing, and is generally made up of a much larger proportion of Aboriginal people than is found in the rest of Australia [agents]. The deserts generate great wealth through primary industries and tourism, and Australia’s desert dwellers are among the most wise, resilient and adaptable people in the world [context].

The challenge of building on these skills in order to address the litany of disadvantage became the focus of a group of people who set to work on recording and systemising home-grown solutions [predicament][+surprise6]. The Aboriginal community worked towards a place of Aboriginal teaching and knowledge: a Desert Peoples Centre. The Northern Territory Government initiated Desert Knowledge Australia, a networking organisation that creates critical mass for desert businesses. And the Australian Government backed the DKCRC for a period of seven years. These organisations came together at the Desert Knowledge Precinct (DKP) in Alice Springs [agents][action].

settlements still face supply-side issues, struggle to retain jobs and the wealth generated by their resources, and Aboriginal Australians remain significantly disadvantage compared to non-Aboriginal Australians [predicament][+surprises5].

But there is much to be optimistic about. The magnificent Desert Knowledge Precinct offers a multidisciplinary home to a wide range of scientific, educational, business and community organisations [intention]. The DKP creates the critical mass of researchers, practitioners and organisations who, in the past, were often isolated from their peers and those working in complementary spheres [context][agents].

The DKCRC was critical to the development of the desert knowledge story, a story that will continue long after the DKCRC is wound up. Since its inception in 2003 the DKCRC has:

- worked with small and micro-businesses, carrying out participatory action research during the crucial phases of establishment and growth in order to understand and articulate to other businesses the necessary measures for success.
- developed remote technologies that improve the profitability of livestock management in pastoral businesses [+surprises].
- created opportunities in the bush products industry that steadied the supply chain by reducing the seasonal and market fluctuations that had hampered the industry’s growth in times past.
- increased the research capacity in desert Australia through our activities, education and training program
- increased the number and skills capacity of Aboriginal researchers, particularly in remote settlements [+surprises].
- created technologies that have the potential to make desert living safer and more productive.

Those involved in the DKCRC can look back with pride on an extraordinarily productive period that will see the desert knowledge story continue to be told far into the future.

(Source: Desert Knowledge CRC 2010b:4)
# The Exit narration of ‘The Desert Knowledge Story’

## The closure of the Desert Knowledge

Cooperative Research Centre offered a great opportunity to examine the phenomenon we have referred to in this and previous executive summaries (as contained in our annual reports, from 2003 to 2010) as ‘the desert knowledge story’ [context]. What was this story? What was its genesis, and how far had it come by 30 June 2010—the final day of the DKCRC’s operation? Were things better than before the DKCRC existed and, if they were, in what ways were they better?

### The desert knowledge movement

The desert knowledge movement began in central Australia in the late 1990s. Australia’s desert settlements were, at that time, beset by problems: a systemic failure in the supply-side delivery of services and local knowledge not being used in decision-making in far-off capitals; poor infrastructure that led to repeated failures in businesses; the extraction of wealth and resources with little apparent return to the source communities [predicament].

**Deserts generate wealth & have wise people**

It was not all bad news. Australia’s desert regions, which cover almost two-thirds of the continent, are home to around 600,000 people, the majority of whom are long-term residents [context]. This population is young, is growing, and is generally made up of a much larger proportion of Aboriginal people than is found in tropical and temperate Australia [context]. The deserts generate great wealth through primary industries and tourism, and Australia’s desert dwellers are among the most wise, resilient and adaptable people in the world.

**Home-grown solutions at the Desert Knowledge Precinct**

The challenge of building on these skills in order to address the litany of disadvantage became the focus of a group of people who set to work on recording and systemising home-grown solutions [objects]. The Aboriginal community worked towards a place of Aboriginal teaching and knowledge sharing: a Desert Peoples Centre. The Northern Territory Government initiated Desert Knowledge Australia, a networking organisation that creates critical mass for desert businesses. And the Australian Government backed the DKCRC for a period of seven years. These organisations came together at the Desert Knowledge Precinct in Alice Springs.

## Changing picture of the desert

In 2010 the picture for desert Australia is in many ways different from that of only 15 years ago and yet, in other ways, unfortunately similar. Remote settlements still face supply-side issues, struggle to retain jobs and the wealth generated by their resources, and Aboriginal and Torres Strait Islander Australians remain significantly disadvantaged compared to non-Aboriginal and Torres Strait Islander Australians [surprises].

### Overcoming research isolation

But on the credit side of the ledger there is much to be optimistic about. There is the magnificent Desert Knowledge Precinct in Alice Springs, a multi-disciplinary home to a wide range of scientific, educational, business and community organisations. The DKP creates the critical mass of researchers, practitioners and organisations who, in the past, were often isolated from their peers and those working in complementary spheres.

### Place of research, teaching and learning

But the DKP is more than bricks and mortar. The DKCRC and its sister organisations have created a place of research, teaching and learning, and knowledge dissemination with an international reputation. Since its inception in 2003 the DKCRC has:

- audited the small and micro-business environment and used this knowledge to work with businesses, carrying out participatory action research during the crucial phases of establishment and growth in order to understand and articulate to other businesses the necessary measures for success
- developed remote technologies that improve the profitability of livestock management in pastoral businesses
- created opportunities in the bush products industry that steadied the supply chain by reducing the seasonal and market fluctuations that had hampered the industry’s growth in times past
- increased the research capacity in desert Australia through our activities, education and training program
- increased the number and skills capacity of Aboriginal researchers, particularly in remote settlements
- created technologies that have the potential to make desert living safer and more productive (SAND, Fire Trailers, VRUMTM).

### The desert knowledge story doesn’t end here.

The DKCRC was a critical episode in the desert knowledge story, though this story will continue long after the DKCRC winds up its activities in 2010. Those involved in the DKCRC can look back with pride on an extraordinarily productive period that will see the desert knowledge story continue to be told far into the future.

(Source: Desert Knowledge CRC 2010a)
Appendix 8. Surprises in The Desert Knowledge Story

<table>
<thead>
<tr>
<th>+Surprise (no.)</th>
<th>Text from The Desert Knowledge Story</th>
<th>Why is it a surprise?</th>
</tr>
</thead>
</table>
| +surprises1     | • ‘Scant attention was paid to desert regions which are the ‘backyards’ of the state jurisdictions they spread across — resources are focused on the population-dense seaboard’ [predicament](2003-04)  
  • ‘how to compete with coastal regions for resources and the attention of decision-makers’ [intentions][+surprise1a](2004-05)  
  • how to compete with coastal regions for resources and the attention of decision-makers. such questions invariably fail when they do not address the unique environmental, social and cultural features of desert Australia [intentions][+surprise1b].(2005-06)  
  • How do we compete with coastal regions for resources and the attention of decision makers? [+surprise1c](2006-07)  
  • How do we compete with coastal regions for resources and the attention of decision makers?[+surprise1d]  
  • Our researchers were invited to present to and comment on the work of state and territory government departments and agencies in several jurisdictions. Desert knowledge researchers are having input at the highest policy-setting levels[causality][+surprise – which policy settings?]. (2007-08) | referring to the desert regions as the ‘backyards’ of state jurisdiction (+surprise1) locks the desert into a spatial relationship with the State. This same surprise is re-told in subsequent narrations as ‘how to compete with coastal regions for resources and the attention of decision-makers.’ This notion has implications on other types of relationship with the desert. |
| +surprises2     | • ‘Significantly, population predictions indicate a 34% increase in work-aged Indigenous people seeking employment in the next 15 years, creating challenges of governance’ [context](2003-04).  
  • Our desert population is young and growing rapidly; one-fifth is Indigenous [agent][context][+surprise2a](2004-05). | the specific identification of ‘work-aged Indigenous people seeking employment’ and coupling this with ‘challenges in governance’ (+surprise2) made my wonder why this specific population group, why other groups were not also considered, and also whose or what type of governance is the story referring to? |
| +surprises3     | • ‘The Centre complements the DPC and DKA, but draws on a skills base of academics, researchers, |

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| actors | academics, researchers, technicians and business people which does not exist in any one partner or organisation’ \[objects\](2003-04).  
- Complementing these ideas was the plan for a centre that would, for the first time, coordinate research activities within Australia’s desert regions: a virtual research hub linking partners across the nation and overseas \[intentions\], one that maintained a skills base of academics, researchers, technicians and business people which did not exist in any one partner or organisation \[agents\] \[+surprise3\](2006-07). | technicians and business people are mentioned \(+\)\[surprise3\]), but where do Indigenous people or others living the desert fit into these categories? This statement appears to show a targeting of a particular ‘sort’ of knowledge. |
| \[+surprise4\] \*desert knowledge* | ‘The DKCRC is admirably placed to capitalise on these opportunities’ \[objects\], ‘to improve the livelihoods of remote desert communities and to develop new export opportunities for Australia’s desert knowledge’ \[intentions\] \(2003-04\).  
- ‘The diverse knowledge these Australians have about prospering in the inland is what we call ‘desert knowledge’. It’s this local, experiential knowledge that must be shared and developed if people living in the desert are to meet the challenges facing them and deliver value to Australia’ \[objects\]\(+\)\[surprise4a\].  
- The close of the Desert Knowledge Cooperative Research Centre offered a great opportunity to examine the phenomenon we have referred to in this and previous executive summaries (as contained in in our annual reports, from 2003 to 2010) as ‘the desert knowledge story’ \[context\]\(+\)\[surprise4\] \(\text{Exit Report 2010}\) | \[+surprise4\] the placement of the DKCRC to ‘improve the livelihoods of remote desert communities’ and develop export opportunities for ‘desert knowledge’ \(+\)\[surprise4\] raises a couple of things. What are remote desert communities (i.e. do they need to have a particular population level to be defined as a community, and do they need to be ‘remote’)? But the point I am most interested in \(+\)\[surprise4\], is that Desert Knowledge appears earlier in the story, but this is the first time it appears as ‘desert knowledge’. The first time infers a reference to a consortium of organisations, but this reference infers the knowledge of the desert. Why is it the last thing mentioned in the story? |
<p>| [+surprises5] home-grown solutions | The challenge of building on these skills in order to address the litany of disadvantage [intention] became the focus of a group of people [agents] who set to work [action] on recording and systemising home-grown solutions [objects](+)[surprises]. | It focuses on place. |</p>
<table>
<thead>
<tr>
<th><strong>[+surprise6]</strong> In contradiction with coastal-desert tension (i.e. [+surprise1]).</th>
<th>• The world’s deserts are sources of huge social, cultural and economic capital, [objects] and policymakers acknowledge the place that desert dwellers and desert businesses [agents] hold in shaping, maintaining and growing this capital [action][+surprise6].</th>
<th>• This statement appears to be in contradiction with the coastal-desert tension.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>[+surprise7]</strong> – ‘helping’ to remain ‘on country’</td>
<td>• An economic analysis of the primary health care benefits gained from land management found that helping Aboriginal people to remain ‘on country’ could cut health bills by up to $2 million for a community of 1200 people over a 25-year period [causality].</td>
<td>• It is the first time that the IIPP is formally mentioned in The Desert Knowledge Story.</td>
</tr>
<tr>
<td><strong>[+surprise8]</strong> Indigenous Intellectual Property Protocol</td>
<td>• Another focus for the program was update our Aboriginal Intellectual Property Protocol [intention]. An expert in IP law and Aboriginal knowledge was engaged, and nine plain-English briefing papers were developed [causality]. The revised protocol (renamed the ‘Aboriginal Knowledge and Intellectual Property Protocol’, AKIPP) clarifies how both Aboriginal knowledge and Aboriginal intellectual property are to be managed. (2007-08)</td>
<td>• Mention of the IIPP for the first time in The Desert Knowledge Story.</td>
</tr>
<tr>
<td><strong>[+surprise9]</strong> failures</td>
<td>In our five-year history not all projects have achieved their intended outcomes [causality][+surprise8] (2007-08).</td>
<td>• There were failures in the projects.</td>
</tr>
<tr>
<td><strong>[+surprise10]</strong> paradox of ‘the bush’</td>
<td>Paradoxically, ‘the bush’ continued to be held in awe and esteem by the same nation that failed to nurture and sustain it [predicament] (2007-08)</td>
<td>• It points out the paradox of how the bush has been conceived of and understood.</td>
</tr>
<tr>
<td><strong>[+surprise11]</strong> extension of ‘the desert’ notion</td>
<td>The partners also recognised that the drivers of remote economic participation are not necessarily encompassed by environmental boundaries; that is, the problems of ‘the desert’ extend to remote communities across the nation [+surprise10] (2007-08).</td>
<td>• It questions the idea that ‘desert’ only applies to regions that are defined by biophysical characteristics.</td>
</tr>
<tr>
<td><strong>[+surprise12]</strong> desert knowledge movement</td>
<td>THE DESERT KNOWLEDGE MOVEMENT HAS a national focus, but its genesis lies in central Australia in the late 1990s [context]. (2008-09) The desert knowledge movement began in central Australia in the late 1990s (Exit narration 2010)</td>
<td>• this is the first time the history of people coming together is called the ‘desert knowledge movement’.</td>
</tr>
</tbody>
</table>

Appendix 9. Desert Knowledge CRC Resources Received 2003-2010

<table>
<thead>
<tr>
<th>Budget Item</th>
<th>Amounts by years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash from grant</td>
<td>$2 350 000</td>
</tr>
<tr>
<td>Cash from participants</td>
<td>$1 480 000</td>
</tr>
<tr>
<td>Cash from other/contract research</td>
<td>$ 764 000</td>
</tr>
<tr>
<td>In-kind from participants</td>
<td>$2 714 000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$7 308 000</td>
</tr>
<tr>
<td>In-kind as a % of the total</td>
<td>37.14%</td>
</tr>
</tbody>
</table>

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**Notes**

1 Indigenous peoples have made representations to the World Intellectual Property Organisation’s Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC); the United Nations Permanent Forum on Indigenous Issues (UNPFII). Additionally, outside of the field of biodiversity Indigenous peoples have also made representations to the various United Nations Human Rights Treaty Bodies, the Universal Periodic Review (UPR); the Expert Mechanism on the Rights of Indigenous Peoples (EMRIP), and the Special Rapporteur on the Rights of Indigenous Peoples (Morgan 2011).

2 As well as the Ad Hoc Opened Ended Working Group on Access and Benefit Sharing, Indigenous knowledge is included in Article 8j of the UN Convention on Biodiversity (United Nations 1992). The IIFB also includes a large contingent of delegates who participate in negotiations through the Ad Hoc Open-Ended Working Group on Article 8j (International Indigenous Forum on Biodiversity-Foro Internacional 2014).

3 The debate over the use of IPRs was shaped by the heavily influential argument that IPRs diminish the public domain, and undermines access to the very thing — knowledge — which the world requires to fix biodiversity loss and others because they diminish the boundaries of ‘the public domain’ (Boyle 2003, Samuelson 2006).

4 The precursor to the National Health and Medical Research Council (NHMRC) (the Federal Health Council) was established in 1926 (Commonwealth of Australia 2014). The National Health & Medical Research Council (NHMRC) became a statutory body by the *National Health & Medical Research Council Act 1992*, which also established the Australian Health Ethics Committee (AHEC)(Commonwealth of Australia 2003).

5 The first iteration of this statement – *Statement on Human Experimentation*, closely followed the *Helsinki Declaration* (Commonwealth of Australia 1999).

6 AIATSIS released one of the first sets of guidelines in Australia that gave substantial support to indigenous autonomy and rights in the research process.

7 The AIATSIS Guidelines were updated in 2011 (AIATSIS 2011).

8 The initial impetus to start exploring further afield, in particular on computer protocols, is based on a discussion with Dr Jane Anderson an expert in the field of Indigenous knowledge and the intellectual property law (Anderson 2003, 3005).

'institutional forms' see virtual organisations as ‘networks of workers and organisational units linked by information and communication technologies (ICTs)’ who all work towards achieving ‘common goals.’ Those favouring the ‘functional form’ see virtual organisations as where ‘independent organisational entities [who] cooperate and jointly form a virtual network organisation’ (Reimer and Klein 2008:148).

Notes Chapter Two

1 In this section while ‘Indigenous research ethics’ goes across the spectrum of research areas, in this instance I’m confining it to non-medical research. The distinction between medical and social research is made on the basis of organisational types. While I cannot say, without empirical investigation, whether there are any significant empirical differences between the organisational contexts in medical and social research, I have drawn the boundary to simplify the analysis.

2 The Central Land Council, for example, moved from standalone protocols, to embedding them within their permit system. For instance, anyone wishing to enter Aboriginal land under the jurisdiction of the Central Land Council to undertake research must apply for, and be granted, a ‘Special Purpose Permit’ to enter these lands – which subsumes protocols and ethics within the permit (Central Land Council n.d.). Under Commonwealth and Northern Territory law it is illegal to travel without a permit through Central Land Council lands, and can result in a fine of up to $1000 (Central Land Council n.d).

3 In the section I do not aim to provide a comprehensive overview of the literature. To do so would require a level of interrogation which is beyond the scope of this thesis. If we are to grasp how protocols order practices and knowledge, and how organisations and individuals enact protocols then casting the net wider may provide conceptual tools that may assist with this endeavour.

4 For Weber, the disenchantment was due to the influence of Protestantism (from the Calvinists) who valued material success and profit. The focus on profit and material success influenced the rise of capitalism (Weber 2002).

5 For Weber, action included ‘social relationships’ in the form of communal and associative relationships (Weber 1968). He argued that communal relationships are based on subjective feelings. Associative relationships, on the other hand, are rationally motivated where actors use agreements to ensure their competitive situation. Weber then considered ‘social relationships’ in terms of open and close relationships. Open relationships, for Weber, do not exclude participation, and closed relationships are based on binding rules of participant that makes them exclusive (Weber 1968).

6 Weber portrayed the position of ‘the official’ as someone who holds a position as a vocation, and who has undertaken a prescribed course of training and specialised exams as a prerequisite of employment. Acceptance of an official position is the acceptance of a specific duty of loyalty to the purpose of the office in return for secure existence (of employment). Loyalty is based on a relationship to impersonal and functional purposes rather to a particular person (Weber 1968). The official usually attains increased social honour or esteem, is appointed by a superior authority (rather than elected), holds a position for life, receives a salary according to their status
(or rank) and their length of services, and has a fixed career line moving from the lower levels to
the upper levels of the hierarchy.

7 Murphy argues that Habermas restructured Weber’s theory of rationality on two grounds
(Murphy 2009). Firstly, Habermas argued that Weber gave priority to formal rationality to the
exclusion of all other forms of rationality. Secondly, Weber confused actions and systems. To
overcome these Habermas introduced the notion of ‘communicative action’, and proposed a
two level-tier of society: the ‘life world, and the ‘system’ (Murphy 2009). Differing from, Weber
who saw bureaucratisation as the tension between formal and value-rationality, Murphy argues
that Habermas saw bureaucratisation as the tension between social and system integration
(Murphy 2009). Habermas’ use of ‘communicative action’ is ‘an attempt to maintain the
differentiated domains of rationality in a framework of intersubjectivity’ (Steureman 1989:55).
Habermas argued that rational thought was not an individual pursuit, but rather something that
was formulated through intersubjective communication (Murphy 2009). ‘Communicative action’
suggests a relational aspect to the formulation of knowledge.

8 Williamson (1981) argues that transaction cost approaches have been applied in three levels of
analysis: to the overall structure of an enterprise; the operating parts of an enterprise; and how
human assets are organised.

9 In the industrial age, and under the influences of classical and neo-classical economics,
knowledge was considered in two ways. It was positioned as an ‘externality’ in economic
exchange, and it was assumed that actors in an economic system acted as self-interested rational
agents with ‘perfect information’ (Baumol et al. 1992:156). With perfect knowledge about all
goods, actors are assumed to possess the ability to make rational choices between them (Baumol
et al. 1992) (known as ‘rational choice theory’). Knowledge was positioned as a public good and
thus considered to be open to threats of the free-rider effect (Manikw 2012). Intellectual
property rights, as well as a legal tool for property rights, were instituted as economic responses
to control access to information to overcome free-riding on (Baumol et al. 1992, Benko 1987,
McTaggart et al 1996).

10 The development of closer relationships between business and academia, as Thrift argues,
signalled the ‘rise of soft capitalism’ (Thrift 2005). ‘Soft capitalism’ challenges earlier discourses
that the world is a bounded, ordered world that can be known by individuals (Bryson et al.
2000). Pollard and Leyshon suggest that ‘soft capitalism’ stresses that: ‘(i) knowledge is partial
and differentiated; (ii) the world is complex and qualitatively and quantitatively differentiated; (iii)
that the material, imagined and symbolic are bounded together and cannot be separated; and (iv)
that individuals are socially constructed’ (Pollard and Leyshon 2000: 144).

11 Under the term ‘knowledge society’ I subsume the term ‘knowledge economy’.

12 Universities play a particular role in the network societies including, for example, in providing:
specialised graduates, particularly for the information technology industries, the research
capacities and capabilities in the form of researchers, financial resources, and facilities for
research. Castells acknowledges the placement of universities in network societies, but his
treatment of them, and other aspects of the network society, fails to adequately create a micro
theory of the network society. Additionally, Castells appears to position Australia’s research and
development on the edge of the informational empire, with limited reference to the role that Australian researchers have played in contributing to the technological advancements in the network society. The Wireless Local Area Network (WLAN or LAN) was, for example, an invention from Radiata Technologies, an Australian company (Matthews and Fraters 2013). The WLAN technology, developed with government labs in CSIRO, benefited from government research and development grants in the 1980s including GIRD (a precursor to the CRC program).

13 By leaving aside Castells’ discussion of information technology in the network society I do imply that information technology is unimportant to how protocols order research practices or Indigenous knowledge. Nor do I imply that information technology is unimportant for exploring how research practices order protocols and Indigenous knowledge. In Castells’ book, The Rise of the Network Society, I find chapter two remarkable for how much space is taken exploring how to measure and calculate productivity. Measuring productivity requires the ability to map and calculate how much work a ‘worker’ completes in an hour of work (OECD 2001). Creating this type of calculation requires some aspects of bureaucracy such as assigning duties to a particular ‘office worker’, and standardising the types of outputs. In universities, for example, productivity is calculated by a formula based on research outputs that relies on the number of publications each academic publishes in a given time-period. Academic research is standardised into a unit that can be calculated. This is done to determine the allocation of funds each university should be awarded through government funding. While this may not strictly resemble Weber’s theory of bureaucracy, it does highlight the existing of rationalisation in universities based on the logic of a market. Productivity drives changes in the economy and, as Castells argues, ‘firms and workers will have little choice because competition, both local and global, imposes new rules and new technologies, phasing out those economic agents unable to follow the rules of the new economy’ (Castells 2010: 94). The ‘new economy’, is also an economy of measuring, calculating, and accounting for changes in the economic activity at various scales. The ‘new economy’ relies on organisational forms that can assist this.

14 Dawkins was the Minster for Education in the Australian Labor Party’s (ALP) at the time. The Dawkins Review heralded the arrival of a new policy which also introduced a Unified National System (UNS) and Higher Education Contribution Scheme (HECS) (Wood 2002).

15 End-users are referred to by the CRC Program as ‘either a public or private entity capable of deploying research outputs to deliver significant economic, environmental and/or social benefits to Australia’ (Commonwealth of Australia 2013: 2). Under this conception ‘producers’ and ‘end-users’ can include, but not be limited to, universities, corporate entities, and non-government organisations (Commonwealth of Australia 2013).

Notes Chapter Three

1 In Australia, for example, the Yanner v Eaton case in 1999 recognised that under the Native Title Act 1993 the use of firearms was allowed for traditional hunting practices (Weir 2012).

2 There also exists literature on ‘guardian’ and crime and criminality. See for example: Hollis-Peel, Reynold and Welsh (2012); Reynald (2010); and Miethe, Stafford and Long (1987). The application of the ‘guardian’ concept, in this body of literature, applies to actors in urban
neighbourhood environments. It is outside the scope of this thesis to engage with literature on the role of guardians keeping neighbourhoods safe from crime.

3 Leonard J. Webb (1920-2008) was a scientist who worked extensively on Australian rainforests (Hutton and Connors 1999).

4 Sir John Burton (1878-1971) was an Australian pathologist and naturalist (Southcott 1981). He formed the ‘Board of Anthropological Research’ at the University of Adelaide with Thomas Campbell and Frederick Wood Jones, and chaired the Board for thirty years (Southcott 1981). His early research included studies of Aboriginal life including on the use of native plants for food and drugs (Southcott 1981). Some of these studies were done with Thomas Harvey Johnston (1881-1951) and N.B. Tindale (years) (Southcott 1981).

5 Thomas Harvey Johnston (1881-1951) was appointed to, and held, various positions in Australia including; assistant microbiologist at Bureau of Microbiology of the NSW Health Department in 1909; lecturer in charge of the department of biology at University of Queensland from 1911; president of the Royal Society of Queensland from 1915-1916; president of the Queensland Field Naturalists’ Club from 1916-1917; member of the Australian National Research Council until his death; professor of zoology at University of Adelaide in 1922 and acted as professor in botany from 1928-34; at the invitation of Sir Douglas Mawson served as chief zoologist with the British, Australian and New Zealand Antarctic Research Expedition of 1929 and went on two cruises in 1929-31; and from 1929-37 participated with John Cleland in expeditions to Central Australia (Sanders 1983).

6 Others who have explored the idea that knowledge is part of a spectrum include, for example, Osmond (2005) and Pantazi (2004). Pantazi, Arocha and Moehr, for example, argue that knowledge sits on a spectrum between ‘reality’ and ‘abstractions’ with implicit knowledge sitting closer to reality, and explicit knowledge sitting closer to abstractions (Pantazi, Arocha and Moehr 2004). Osmond’s knowledge spectrum, for example, includes the categories of received/accepted (store of different types of knowledge that can inform practices); action (performance or technical knowledge); and interactional-contextual knowledge (impact and influence of the preceding knowledge categories) (Osmond 2005).

7 Assemblage thought, as outlined by Deleuze and Guattari (1987), rests on the notion of ‘rhizome’. Rather than a hierarchy and a system of dualism, rhizomatic thought posits six principles: 1) connection; 2) heterogeneity; 3) multiplicity; 4) signifying ruptures; 5) cartography; and 6) decolomammbia. Connection and heterogeneity refers to how ‘any point of a rhizome can be connected to anything other, and must be. This is very different from the tree or root, which plots a point, fixes an order’ (Deleuze and Guattari 1987:7). The principle of multiplicity, posits that only when looking at the multiples as substantive do they cease ‘to have any relation to the One as subject or object’ (Deleuze and Guattari 1987:8). The principle of ruptures posits that the rupturing does not destroy a rhizome but rather re-creates and reforms it. Lastly, the principles of cartography and decalomammbia posits that rhizomes do not lend themselves to rarefied models, that a ‘rhizome is a map not a tracing’ (Deleuze and Guattari 1987: 12).

Notes Chapter Four

1 The election of the six remaining Board Members was achieved through a process whereby: ‘Centre partners provide multiple nominations to the six remaining Board positions through electoral “colleges”, from which a group of non-representational members is chosen to satisfy sectoral and geographic interests, while maintaining a balanced portfolio of skills’ (Desert Knowledge CRC, 2004:6).

2 Under the CRC Program Guidelines, in-kind contributions were calculated using a nominal value for covering salary, direct salary on-costs, direct and indirect support costs of research (Commonwealth of Australia, 2013). For example, under the June 2013 CRC Program Guidelines the in-kind contributions were indicated as: Program Leader/Senior Manager $420,000; Key Researcher/Manager/Project/Theme Leader $280,000; Researcher/Professional $220,000; and Other (support staff – technical, administrative etc.) $180,000 (Commonwealth of Australia, 2013).

Notes Chapter Five

1 For example, Principle 11 of the 2011 AIATIS Guidelines for Ethical Research in Australian Indigenous Studies states that: ‘Indigenous people involved in research, or who may be affected by research, should benefit from, and not be disadvantaged by, the research project’ (AIATSIS 2011:13).

2 Imagine for example that a researcher wants to know about medicinal and food properties of a particular plant species (for example, Acacia aneura). The researcher may approach an Indigenous community, or individuals, where this plant exists and ask them about the medical properties. The researchers may then enter into an access and benefit sharing agreement with this community or individuals to develop a product based on the Indigenous knowledge. However, the Acacia aneura plant has a large geographical range in Australia. What occurs when another Indigenous group claims that they have the same knowledge, or that this knowledge is a well known across all groups of the outback. It is, in effect, part of the public domain of Indigenous knowledge. Should a contract aimed at privatizing the knowledge be entered into?

Notes Chapter Six

1 The only clause of the IIPP that the Board did not appear, clause five, was dedicated to confidentiality.

2 The issue of biological resources across different jurisdictions was considered in the Pacific, and in that situation a regional agreement between States was established which formed the basis of the South Pacific Model Law (Tobin 2013).

3 While Guillemin and Gillam (2004) refer to ‘ethics in practice,’ to maintain the use of this phrase without resorting to the use of commas, I use the term ethics-in-practice. The phrase does not suggest that I am using the concept in a differing manner to Guillemin and Gillam (2004).
Notes Chapter Seven
1 Rip-off is a term that is used widely in discussions around ownership of knowledge and intellectual property rights. It is a colloquial term for ‘theft’, or unauthorised use or copying, of IP.

Notes Chapter Eight
1 The DKCRC slogans listed used to appear on the holding page for the DKCRC (www.desertknowledgecrc.com.au). When the DKCRC was still in operation a holding page existed that looked similar to the front page of the DKCRC branded notebook shown in figure 12. The DKCRC no longer exists and all documents have been subsumed into the newly established CRC for Remote Economic Participation (CRC-REP). Any links onto this link redirect to CRC-REP.

2 Klein’s characteristics of stories included agents: people who figure in the story; predicaments: the problem the agents are trying to solve; intentions: what the agents plan to do; action: what the agents do to achieve their intentions; objectives: the tools the agents will use; causality: effects of carrying out action; context: details surrounding the agents and actions; and surprises: unexpected things that happen in the story (Klein 1999:177-178).

3 Klein defined surprises as ‘unexpected things that happen in the story’ (Klein 1999:178).

4 Referring to the central parts of Australia as the ‘dead heart’ derives from J.W Gregory’s book called The Dead Heart of Australia (Gregory 1906). Gregory’s book was an account of his journey around Lake Eyre, Australia in the summer of 1901-1902.

5 Clarke (2008), for example, writes about the relationship formed between early explorers and Aboriginal and Torres Strait Islander guides such as those formed between: Edward Eyre and Wylie, Ludwig Leichhardt and Charley Fisher, Peter Warburton and Charley, and John Forrest and Windittij.

6 See, for example, Rowley’s book The Remote Aborigines publishes in the early 1970s (Rowley 1971).

7 Under the Köppen classification is scheme, the ‘desert boundary is defined by the formula: If rainfall evenly distributed through year – Rain < 10 (T + 7); If rainfall has a definite summer maximum – Rain < 10 (T + 14) If rainfall has a definite winter maximum – Rain < 10 (T); where T is the mean annual temperature (in °C). Semi-arid areas are defined as other areas where rainfall is less than double the above limits’ (Commonwealth of Australia 2006:10).