Strategic Thinking: An Exploration

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

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Declaration

I declare the following:

a) except where due acknowledgement has been made, the work is that of the candidate alone;

b) the work has not been submitted previously, in whole or in part, to qualify for any other academic award;

c) the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program;

d) any editorial work, paid or unpaid, carried out by a third party is acknowledged;

e) ethics procedures and guidelines have been followed.

Signed,

Jason Downs
Acknowledgements

Wow. What a journey.

Undertaking this thesis has taught me many things – not the least of which is what it means to organise my thoughts into some sort of meaningful map, located within an extant and growing body of knowledge. As far as that is possible, I believe I’ve been able to adequately accomplish this. I’ve really enjoyed exploring new territories, examining the paths of others and in some small way, striking out into the great unknown on my own.

But of course, it wasn’t on my own – I undertook this journey cognisant that others have started out on similar journeys before me and also with the knowledge that for a very large part of this exploration I was encouraged, cheered, supported and even prodded along.

To that end, I’d like to thank a few people:

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I dedicate this thesis to my parents, Gary and Bernadette Downs.

You have always supported me, encouraged me to do my best in all circumstances and have been my greatest advocates.

You once took up the fight on my behalf. All these years later, this thesis is my right cross that finishes that fight.

I love you both.
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Abstract of Thesis

This thesis explores the intersection between cartography and strategic thinking utilising a Strategy-As-Practice lens. Maps have long been used to (re)present our world and they form an epistemology of knowing. Mapping practices, whilst widely adopted, are still contested spaces. Although we know what maps are, we know less about how they work. This research identifies eleven elements of maps and proposes that they can be arranged in an epistemic technology as a mechanism for managers to explore their strategic thinking.

The research questions asked as part of this thesis are:

1. Can cartographic conventions be used to help managers undertake strategy, and if so, how?

2. Can cartographic conventions help us to understand the strategic thinking processes of managers?

3. Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?

Using a methodology informed by Learning by Design (Kalantzis, Cope & The Learning By Design Project Group 2005) to facilitate a co-generation of rich data, four senior managers shared their experiences of strategic thinking and we co-investigated how mapping elements might be related to their practice.

Drawing on cartography literature, multiple map elements were identified and used to help structure the conversations between researcher and research participants, ultimately forming the data co-generation phases of the research.

The methods involved included conducting deep interviews with the participants, where each was interviewed on up to four separate occasions as part of a four-stage cycle. Each data co-generation cycle was structured and conducted as a partnership of learning; an approach borrowed from (Wagner 1997) utilising co-learning agreements wherein the roles of researcher and
participant become blurred and in which each becomes responsible for co-generation of the data.

The co-generated data was analysed using template analysis (King 1998) and data from one cycle was used to inform data co-generation cycles within and across participant cycles. This particular approach to conducting research with the participants as active agents within the research process and design offers the first of the contributions of this thesis to the Strategy-As-Practice research discipline.

From these co-generation cycles and subsequent data analysis, eleven map elements were identified as being present within the mechanisms that the managers undertook in their strategic thinking praxis. The eleven elements were: Title, Frame, Date, Symbols, Selection, Scale, Projection, Simplification, Displacement, Smoothing and Enhancement.

A framework is proposed that suggests a cartography-informed epistemic technology of strategic thinking.

As a second contribution to the Strategy-As-Practice field, this research offers the eleven map-making elements as an open-ended scaffold for individuals and teams to think and plan strategically (together) without ever prescribing either process or ‘content’. At the same time, these elements offer a shared professional language for describing and understanding Strategy-As-Practice. They will function as enablers of clearer, more thoroughly thought-through and explicit strategy thinking/making ‘out loud’.
To ask for a map is to say, “Tell me a story.”


The map is not a picture. It is an argument.

– Wood & Fells 2008, The Natures of Maps:

Cartographic Constructions of the Natural World

There is no such thing as an empty space on a map.

The Moment

Undertaking a thesis, it turns out, is a big job and at times highly anxiety-inducing. *Have I done enough? Is my contribution worthy? Is my argument strong enough? Have I tied up all the loose ends? Does it make sense? Is it useful?* I faced all these questions, and many more, at one stage or another on my way to completion. However, there have been moments of joy and elation too: when I finally understood a particularly challenging passage of text whose message had been eluding me; when seemingly disparate streams of ideas coalesced into something meaningful; when I was able to explain for the first time what my thesis was about in a manner that was straightforward, clear and succinct.

What follows is a recount of what I have come to think of as ‘The Moment’. This was the exact point at which everything seemed to come together and I realised that my contribution can be useful, that what I have to say can matter and how the theory of what I’m proposing connects directly with the practices of strategists.

On to the story…

It was the final few weeks of pulling my thesis together. There was a lot to do and the self-imposed deadline was looming. It was not a time for distraction.

And then the email arrived.

I had been invited to participate in an executive strategic planning retreat for a large organisation, but it involved attending both an evening dinner and a full day of planning on the next day. To make matters worse, the retreat was being held a few hours away and I was required to stay overnight at the resort with all the executives. The timing couldn’t have been worse and I wrestled with the decision as to whether I should attend. If I did, it would mean sacrificing nearly two days of writing; on the other hand, if I declined, I would miss the opportunity to personally and professionally grow through engaging with an executive team and seeing ‘how strategy is done’ in that context.
In the end, I decided to go.

The dinner turned out to be enjoyable and I made some valuable contacts, one of whom invited me to visit their organisation in South-East Asia. Our talk ranged across many diverse topics, yet always seemed to come back to strategy. I was able to speak about my research and occasionally suggest ways to think about the challenges that were being faced through that lens. It seemed to me that my ideas were accepted (or it may have been that this particular executive was being polite) but I went to bed that night feeling a little more confident about my research and its ability to be applied in a real-world context.

The next day was fully devoted to hammering out a strategic direction and, whilst primarily I had been invited along in order to contribute, I found myself spending a considerable part of the day watching how this group of executives undertook their strategy-making process – their Strategy-As-Practice.

At the start of the day, after coffee, we entered into the conference room where there were five tables, each with ten chairs around it. We all took our seats and there before us, on the table, were laminated versions of the organisation’s ‘roadmap’. This diagram was thin on detail and thick on icons, symbols, loops and arrows, intended to guide us towards a common understanding of the long-term strategic vision of the organisation. Apparently, we were to refer to it when designing the strategy for 2013. Looking around the group, I could see that the executives present were giving this a lukewarm reception, at best. Part of the problem was that people didn’t know how to ‘read’ this map and in early discussions it looked as though there were multiple interpretations of what it meant.

The facilitator asked us to each consider the map and then enter into a group discussion as to what we thought the most important aspects of the map were. We were then to report back to the rest of the room.

Within our group, there were indeed multiple readings of the map and once everyone had put forward their own interpretation, there was precious little time left to summarise and debate. The facilitator called time and our elective
spokesperson rose to deliver our report. Considering the number of different views expressed, she did a great job, but I thought that some of the more important insights were under-represented and a few of the more minor insights highlighted inappropriately. Nevertheless, our report was delivered and the executives on the other tables seemed to be listening carefully. This process was repeated for all the other groups, and as the facilitator worked her way around the room it seemed that the views expressed were broadly similar. They did, however, vary considerably in the detail.

Over the course of the morning, we were guided through various discussions and we also had plenty of time to break, mingle with executives from the other tables and chat. I found that quite a few discussions seemed to eventually revert to the map, as we wrestled with what we thought it was supposed to ‘mean’.

As the day drew on, I became aware that familiar themes were emerging and I began to compare what was happening in the room with what I had discovered in the process of undertaking my thesis. I’m unable to put my finger on the exact moment it happened (although it was sometime after lunch), but I gradually became aware that the conversations around me were becoming ever more centred around the roadmap and it seemed that the participants’ interpretation of it was solidifying. I don’t recall there being a deliberate process enacted to make this happen; it just seemed to occur spontaneously. I became acutely aware that the executives in the room were beginning to use a common language – the language of the map – in order to carry out their discussions and forge a common understanding. It was more than just referencing what was on the map, though. I began to notice that issues that weren’t on the map were not being discussed at all – where the map was silent, so were the executives. The diagram effectively framed discussion and this had a knock-on effect of constraining discussion and debate. Those discussions that were being held were being held at the same ‘level’, and it was as if everyone was seeing their strategic world at the same scale, with a similar understanding of the amount of detail involved. The map was also being used to reinforce the idea that ‘growth
was good’ and all other discussions seemed to be held in this economic context. Discussions around deeper industry engagement were all about sustainable growth; discussions about number of ‘customers’ were all about growth; discussions about engaging with other cultures and in other locations were all about growth; discussions about improving internal processes were all about building capacity to handle more growth. Just as maps can be used to reinforce political power relationships and to suppress resistance, the central role of the roadmap was facilitating just such violence. The map became an important artefact in developing and controlling discussion whilst at the same time relegating issues that were not represented on the map as somehow inferior, and not worth considering.

At the time, I was aware of this happening and felt uneasy about it, but the mood in the room was such that it felt any dissent would not be viewed favourably.

Now I am not suggesting that this was a deliberate process of suppressing dissenting voices, or that this was a conscious act at all; it was just how the day played out. The map was presented to the group as already having been accepted and endorsed by the ruling executive cadre and this apparent stamp of legitimacy meant that any questioning of the map would be seen as a political challenge, and one that very few people (myself included) were willing to take up.

My understanding of how strategic retreats ‘work’ had been based on having previously attended these kinds of events, and through my research into the field. On the surface, this strategic retreat had been unremarkable. However, I found that my alternative reading of what was happening enabled me to imagine a future wherein a more critical approach to both content and process could occur.

My thoughts are best summed up in an extract from an email I sent to one of the executives the following day, in part thanking them for inviting me:
“There was an unexpected and very welcome realisation for me about 2/3 of the way through the final day. As you know, my thesis looks at strategic thinking and maps. I’m arguing that maps act as an epistemic technology that may be able to help people to undertake their strategic thinking and aid in strategic action. It was wonderful to sit there and listen to everyone discuss the [organisation name] ‘roadmap' and to overlay my thesis on those interactions. While I thought that what I am arguing in my thesis made sense to me, I was unsure if it is likely to have any benefit 'out in the wild'. The retreat helped me to see that my research does have a use, that it is possible to imagine scenarios where it is used by practitioners and that it may help to contribute to meaningful decisions.”

A few weeks on, as I sit here, putting the final touches on my thesis, I feel confident in its contribution and feel that, even though there is significant room for further research in this area, I will be able to take these findings, apply them in the real world and help make a difference. Ultimately, the Strategy-As-Practice community are concerned with engaging with strategy as something an organisation does, rather than something it has (Jarzabkowski 2004) and I feel with this thesis that I have something to contribute to that conversation.
Introduction

‘A map is a social document serving many functions. It is a representation of knowledge, and archival device, a concordance of the world and its image. A map is a dream, an idea, an action and emblem of human endeavour. It instigates adventures. Maps encompass the entirety of what is beheld. They are the result of holistic perception, of the fact that our eyes are constantly travelling. They are also an act of conscious remembering, for there can be no remembering without previous perception that is tied to places and landscapes. Our eyes have evolved into expert observers of landscape, the eyes of hunters and gatherers, of the hunted and the assembled. Careful perceptions of our surroundings have always been matters of life and death.’ (Virga 2007, p.5)

So begins the prologue to Cartographia, setting the scene for a treatise on maps and their place in our world. What follows this quote is a compendium of maps and text that provides a comprehensive survey of mapping and its uses across time and place. Central to the book is the theme that maps are ‘social documents’ that have served many purposes and that over time have been constructed using many different methods. Maps are living documents, at once permanent and at the same time editable; even the most elegant, copperplate, engraved maps can be drawn over, re-etched and re-mapped.

There are examples of the medieval Mappa Mundi, where the maps were not primarily designed to be useful as navigational tools, but rather helped to illustrate concepts and points of cultural understanding of how the world ‘is’; an ontological expression about the way in which the world worked. Indeed, as Mark Monmonier points out in his wonderful critical treatise on maps and map reading, How to Lie with Maps, maps do far more than just present neutral information, but are devices that can be used ‘…as a tool of deliberate falsification or subtle propaganda’ (1996, p.1) and in doing so, if spread widely enough and if adopted comprehensively enough, they have the power to influence and potentially (re)shape reality.

So, discovering the Mappae Mundi had a disorientating affect on me. I learned that these maps were useful in helping people to understand the cultural aspects of the world in which they lived and that this was often achieved
through the additions of ‘Decorative title pages, lettering, cartouches, vignettes, dedications, compass roses, and borders’ (Harley 2001c, p.73). They illustrated not that which was known but that which was believed and this often included religious dogma, the rights of nobility over the peasants or the reinforcement of racial stereotypes (Harley 2001c). The illustrations helped readers to orient themselves in relation to the beliefs (perspectives) of the map-maker or, more accurately, the person/State that paid for it. It was only more recently – from the time of The Enlightenment – that these decorative elements that held so much meaning for map-readers were removed in favour of a more scientific and utilitarian application of cartographic endeavours. The removal of these decorative elements served the purpose of reinforcing the increasingly dominant position of power that Science has come to hold in our modern world.

It is these Mappae Mundi that have helped to shape this thesis. Growing up in rural South Australia and attending a public ‘state school’ my only real interaction with maps were of the official kind that they had in the classrooms. These maps purported to show objective reality – the location of continents, nations, the Commonwealth, the oceans – and I believed what they had to say. I never learnt to question the maps; I was never taught to think of maps as anything other than a means of reporting of what was known about the world, about undisputed facts.

And for a long time, I thought that's all that maps were.

I recognise that I also held similar views about strategic thinking, strategy formulation and strategic planning. My exposure and education in the strategy and strategic thinking disciplines have all been in the last decade of the 20th century and the first decade of the 21st. This period has been characterised by a turn towards the professionalisation of strategy by both practitioners and academics. Strategists became functional specialists, tasked with undertaking analysis using an ever-expanding set of strategy tools. Strategy became a positivistic and objective profession, one more interested in the output of spreadsheets and matrices than on the role of the strategist who may also rely
on gut feel and intuition. Thus, my views on strategy were as narrow as my views on maps and mapping.

Over the last decade, my thinking on both strategy and cartography has been significantly challenged. The recent emergence of the Strategy-As-Practice field and the relatively recent emergence of critical cartography both suggest exciting developments in the understanding of strategy and maps respectively.

In undertaking this thesis, it was time for me to re-examine my views.

If one accepts that strategic thinking precedes strategic planning, and that conceptualising a map precedes drawing it, then I would argue that having regard to some of the conventions and history of cartography can help managers improve their strategic thinking praxis and hopefully, as a result, improve the strategies that are eventually produced. It is through the use of various mapping techniques and conventions that I believe cartography can offer a way to re-conceptualise the strategic thinking process.

I also believe that exploring this combination of disciplines can contribute to the ways in which we understand strategic management. Few writers have tried to directly combine cartographic principles with the acts of strategic thinking and strategic management, and even in the few notable exceptions (see, for example, (Doyle & Sims 2002), (Eden, Ackerman & Cropper 1992)), the focus is on specific mapping techniques rather than on a broader application of cartographic approaches to management discipline and strategic thinking.

Ultimately, this research proposes a model that can be used by strategic thinkers to help guide their process of strategic thinking. The model itself is an imperfect artefact of the research project and it hides the ‘practice’ aspect of the research in its representation. The irony of this is not lost on me – in creating a model, I have created an imperfect representation of the work that I undertook; I produced a map of the research findings but at a reduced scale. Thus one of the important findings of the research is silenced on this map – that the model requires practice for it to be effective. Managers will need to engage with it and
find ways to incorporate it into their praxis if it is to be useful. The model by itself will not help shift a manager’s praxis, just as a map that hangs on the wall as a curio is less valuable than the map that is deliberately used to plan and execute a journey.

The model also hides the way in which this research project evolved and the very personal aspects of the research. This project has been a learning experience both for me and for the participants. Indeed, one of the contributions of this research is the identification of a methodological approach to practice-based research wherein the participants and the researcher don’t stand apart from each other, but are in fact regarded as co-learners, travellers on a similar journey. The methodology chapter explores this aspect of the research more deeply and I make some concluding remarks about this in the discussion chapter. However, it is in this explication of co-learning that the issue of scale once again comes to the fore: for as Borges explained in *On Exactitude in Science* (1658), a map drawn at a scale where ‘…a map of the Empire whose size was that of the Empire, and which coincided point for point with it’ was not useful. And indeed it is impossible for me to write accurately of this in this thesis, for as Korzybyski (1931) points out, ‘the map is not the territory’ – the map that I have made is nothing more than my rendering of that which I have deemed important enough to map. Additionally, the recording of this map is constrained by the physical limitations of the thesis form and my own limitations as expressed in my choices about what to map. Others may choose to draw different maps, and although they may never be able to redraw my map, they may be able to make a copy.

So, how did my model – my map – come into being?

Briefly, I set out to interview senior managers, seeking to understand how they undertook their strategic thinking. I was (and still am) interested in the mechanisms, the nuances and their praxis when it comes to undertaking what they thought of as strategic thinking. As each participant in the research had their own context within which they worked, their own experiences upon which they drew, these deep interviews were treated as case studies – bounded and
unique instances of experience(s) that were used to help understand what it meant to *them* to undertake strategic thinking. Each of the participants was allowed to define what ‘doing strategic thinking’ meant and it was within these contexts that the research progressed.

In total, there are four case studies, each based on a cycle of four separate, deep, semi-structured interviews that were audio recorded and in some instances videotaped. The participants in the research were all senior executives in their respective organisation and each wielded considerable responsibility, extending to decisions about resource allocation. Decisions taken by these executives were translated to action within and by the organisation within its strategic context. The thoughts and actions of these executives mattered.

Each series of interviews was based on a framework of learning that is used to inform pedagogy, recognising that neither the research ‘participants’, nor the ‘researcher’ are experts and that each have contributions to make. This approach to the methodology reflects Wagner’s (1997) point that some research is conducted intimately with participants and that the boundaries between researcher and those who are researched can become blurred.

The data co-generation sessions were designed to investigate the following three research questions:

1. Can cartographic conventions be used to help managers undertake strategy, and if so, how?
2. Can cartographic conventions help us to understand the strategic thinking processes of managers?
3. Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?

The data was analysed using Nigel King’s (1998) template analysis and supported by an application of Charmaz’s (2005) constructivist grounded theory method. These modes of analysis are explained in the methodology section of this thesis.
The use of this dual approach to analysis required a deep and sustained immersion in the data and also allowed me to operate within a framework that also acknowledges that I bring certain preconceived ideas and experiences with me when I undertake the analysis – that I come pre-armed with codes and beliefs about how the world works.

Some will see this as a problem in that the data thus coded is not objective and free from my own personal biases. I have tried to account for this when co-generating the data with the participants by adopting the role of a co-learner, by ‘living’ as an equal in the research process, recognising that I didn’t (and couldn’t) know about their personal experiences and that I would be analysing the data through my own experiential lenses. All I could do was ask questions and seek clarification throughout the data co-generation phase of the project and check back with the participants that I hadn’t misinterpreted anything.

In this ‘weakness’ of the methodology, I also see a strength. ‘Owning up’ to the fact that I didn’t have all the answers and confessing this at the start of the project to the participants made it much easier in the data co-generation phase to ask ‘the dumb questions’. Often it was the repeated asking of the same question in different ways that allowed me to eventually get to what I thought might be the heart of the issue. More than once my internal dialogue went something like this:

**ME:** She must think that I’m stupid for asking about the same thing over and over again.

**ME:** She must be thinking “God, didn’t I just answer that?”

**ME:** I bet she’s thinking “How many ways does he want me to answer this question? It’s not *that* hard!”

**ME:** These are really smart people; they must think I’m dumb.

But it was the knowledge that I had already given permission to myself to approach data co-generation in this manner and the pleasure in what I saw as a genuine commitment by the participants to engage fully in the research that
helped me resolve these feelings (however imperfectly). I feel the data co-generated through this approach is that much richer for it.

From within this deep immersion in the data, from the reading that I have undertaken in the fields of strategy and cartography, and from hours wrestling with how to represent all that I have learnt, I have conceptualised a model. This model tries to explain how managers might use some of the conventions found in cartography to assist them in their strategic thinking praxis. I have shied away from asking the participants to produce maps – this research is not about the artefacts that arise as a result of strategic thinking – and have concentrated on trying to understand what the epistemic technology of cartography-informed strategic thinking looks like.

This research was not without its challenges, one difficulty being to move away from what I saw as being an institutionally acceptable means of praxis into an area that was ‘new’. This tension was incredibly powerful and the urge to accept that which has already gone before as the best and most appropriate way of moving forward with my research (including accepting well-trodden paths in terms of methodology) had me concerned that I was on a fool’s errand. Eventually, though, I came to accept this uncomfortable feeling not as a warning sign, but as an indication that I was probably heading in the right direction. I’ve come to learn that there is a difference between being lost and doing something about becoming ‘un-lost’ – even if that means having to strike out into unknown territory and head in a new direction.

I imagine that the ancient explorers in search of the new lands that they hoped existed ‘out there’ might have felt the same.
Chapter summary

This introductory chapter sets the scene for connecting the fields of cartography and Strategy-As-Practice. It outlines the central concern of this thesis, which is to answer the three research questions:

1. Can cartographic conventions be used to help managers undertake strategy, and if so, how?

2. Can cartographic conventions help us to understand the strategic thinking processes of managers?

3. Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?

Within this chapter, I outline my approach to co-generating data with the research participants and why this particular approach is appropriate given the research questions that I posed.

I speak of the contributions to the body of knowledge that this thesis makes, the first being a novel, yet appropriate application of Wagner’s (1997) co-learning agreements combined with the Learning by Design (Kalantzis, Cope & The Learning By Design Project Group 2005). The second contribution that this research offers is the eleven map-making elements of maps as an open-ended scaffold for individuals and teams to think and plan strategically (together) without ever prescribing either process or 'content', whilst simultaneously offering a shared professional language for describing and understanding Strategy-As-Practice. Finally, the third contribution that this research makes is a conceptual model that can aid managers as enablers of clearer, more thoroughly thought-through and explicit strategy thinking/making ‘out loud’.
From the cases: Linking theory and practice through epistemic technologies

Epistemic cultures, machineries and technology

One of the consequences of the strategy profession attempting to establish itself as a legitimate discipline is that it has spawned a significant, if disparate, literature on strategy making. Within this literature are ‘an array of strategy ‘tools’, such as core competences and scenario planning’ that are used extensively in teaching strategy and inside organisations undertaking the strategic planning process; but the literature provides ‘…few insights on how they are used in practice or their consequences’ (Spee & Jarzabkowski 2009, p.223).

It is this very explicit focus on the praxis of strategists in which the Strategy-As-Practice scholars are interested. As a result, there has been research undertaken at a variety of levels as a way to understand this praxis. For example, studies have looked at the way in which PowerPoint influences and shapes the creation of strategy (Kaplan 2011), the use of photographs, data packs, maps, spreadsheets and graphs within the strategy-making processes of a large re-insurance firm (Jarzabkowski, Spee & Smets 2013) how strategic planning facilitates strategic conversations (Spee & Jarzabkowski 2011), the role of meetings in the strategy-formulation process (Jarzabkowski & Seidl 2008), and the role of embodied metaphors in strategic planning (Heracleous & Jacobs 2008). These activities constitute what Knorr Cetina (1999) terms ‘epistemic machineries’.

Epistemic machineries are the mechanisms through which knowledge is produced. In her book, Knorr Cetina (1999) states that she is ‘…interested not in the construction of knowledge but in the construction of the machineries of knowledge construction’ (p.3). She makes the claim that epistemic machineries are utilised within epistemic cultures, which she defines as ‘…those amalgams of arrangements and mechanisms…which, in a given field, make up how we know what we know [emphasis in original]’ (p.1) and she proposes that
‘... contemporary Western societies are becoming (or have become) “knowledge societies.” They run on expert processes and expert systems that are epitomized by science but are structured into all areas of social life’ (p.1). These epistemic machineries are the specific ‘what’ and ‘how’ of knowledge construction in the formation and maintenance of knowledge cultures. It is the epistemic machinery that brings together the ‘signification and the behavioural text of practice, and that views of culture that ignore the conduct of experience are just as limited as views of practice that squeeze symbols out of the picture’ (pp.10-11).

So in setting out her argument, Knorr Cetina (1999) has two basic levels of analysis. She proposes that knowledge is created within what are regarded as epistemic cultures – ‘cultures that create and warrant knowledge,’ (p.1) and these cultures together form a knowledge society. However, it is through the application of the various epistemic machineries – the processes through which knowledge is created – that epistemic cultures are formed. Epistemic cultures are larger and more complex than the individual epistemic machineries that created them; it may be that the epistemic machineries relied upon are from different disciplines and it is this synthesis of epistemic machineries that can lead to new knowledge. To illustrate her argument, she examines two cases within the natural sciences – High Energy Physics and Molecular Biology – and examines the machineries of knowledge and the implications of these epistemic machineries for knowledge creation within each respective epistemic culture. She makes the point that these two cases were only two of any number that could have been chosen and that she chose them specifically as they show marked differences from each other, thus providing a rich field to examine.

Strategy-making and strategic thinking can also be viewed as knowledge work. Some of the characteristics of knowledge work include:

- **Knowledge Workers have to manage themselves. They have to have autonomy.**
• Knowledge work requires continuous learning on the part of the knowledge worker, but equally continuous teaching on the part of the knowledge worker.

• Productivity of the knowledge worker is not—at least primarily—a matter of the quantity of output. Quality is at least as important.

and

‘…knowledge work, unlike manual work, does not program the worker. The worker on the automobile assembly line who puts on a wheel is programmed by the simultaneous arrival of the car’s chassis on one line and the wheel on the other line. The farmer who plows a field in preparation for planting does not climb out of his tractor to take a telephone call, to attend a meeting, or to write a memo. What is to be done is always obvious in manual work.

However, in knowledge work the task does not program the worker. A major crisis in a hospital, such as when a patient suddenly goes into coma, does of course control the nurse’s task and programs her; but otherwise, it is largely the nurse’s decision whether to spend time at the patient bed or whether to spend time filling out papers. Engineers are constantly being pulled off their task by having to write a report or rewrite it, by being asked to attend a meeting, and so on. The job of the salesperson in the department store is to serve the customer and to provide the merchandise the customer is interested in or should become interested in. Instead, the salesperson spends an enormous amount of time on paperwork, on checking whether merchandise is in stock, on checking when and how it can be delivered, and so on—all things that take salespeople away from the customer and do not add anything to their productivity in doing what salespeople are being paid for, which is to sell and to satisfy the customer.’ (Drucker 1999, pp.84-85)

Strategy-making and strategic thinking are a series of related activities (Jarzabkowski 2005) that are concerned with the future direction of the organisation, and it is this collection of activities that can be described as a ‘technology’:

‘By technology is meant the actions that an individual performs upon an object, with or without the aid of tools or mechanical devices, in order to make some change in that object. The object, or “raw material,” may be a living being, human or otherwise, a symbol or an inanimate object.’ (Perrow 1967, p.194)
I propose in this research that there is a layer of epistemic understanding that resides between epistemic cultures and epistemic machineries. This in-between layer should be referred to as an ‘epistemic technology’. An epistemic technology recognises that there are a related set of activities that are bounded but may be combined in various ways to make new knowledge. Where a combination of epistemic machineries form to make an epistemic culture (and those machineries may come from anywhere), an epistemic technology is more focused, restricting itself to a narrower set of more tightly related conceptual tools and models to facilitate a desired ‘change’. For example, if we were to extend Knorr Cetina’s (1999) work into the strategic management field, the epistemic machineries of strategy would be likely to include all the various tools, models, matrices etc. that are taught in business schools and routinely utilised in organisations, as well as all the objects and other enabling technologies (e.g. Powerpoint, MS Excel, word processors, Post-It-notes, whiteboards). The epistemic machineries may consist of or make use of machineries that have been borrowed from other disciplines, e.g. accounting reports, marketing data/reports, manufacturing data, import/export data.

The various combinations of these epistemic machineries can be used to highlight or emphasise certain aspects of information or perspectives that can lead to biased thinking or decision-making. An epistemic technology would exist in order to reduce any potential biases and also serve to suggest which combinations of epistemic machineries are the most useful. Thus an epistemic technology places a boundary around the use of these epistemic machineries, constraining their use for a specific purpose. An epistemic technology is a combination of specific actions that precedes the production of artefacts (strategic plans and the like) and thus produces change at a local level before communication of that change occurs.

Understanding the specific combination of epistemic machineries that form a particular epistemic technology is important, as it allows controlled experimentation, analysis and review. Technologies that work are likely to be repeated and may be codified for wider dissemination amongst other members.
of the epistemic culture. Technologies that fail can able to be altered or no longer utilised.

I argue that it is not only the epistemic machinery, but the sophisticated manner in which this machinery is organised into an epistemic technology that will facilitate the generation and dissemination of knowledge. This epistemic technology needs to be contextualised for each situation if it is going to be useful for the people using it.

The adoption of successful technologies will have a recursive effect on the larger social practice-complexes (Chia & MacKay 2007) within which they occur – in this case, strategy-making.

In the ‘Cartography, maps and mapping’ section of this thesis, I outline how the discipline of cartography affords an example of such an epistemic technology. Mapping has a long, rich and diverse history and has, like other disciplines and technologies, had to transform itself over time in order to remain relevant. This transformation has not been smooth and is punctuated with disruptive innovations and ontological shifts. Nevertheless, even now as cartography continues to evolve, the process of mapping can still provide a framework which can help strategic thinkers to understand how a particular set of epistemic machineries can be combined into an epistemic technology to facilitate strategic thinking praxis – a praxis that I explore later in the thesis.
Review of the literature
– Strategy and the Strategy-As-Practice sub-field

‘The great thing about a map, it can get ya in and out of places a lot of different ways’ – MacGyver

The quote above comes from an early episode of MacGyver (if you are interested, you can watch the clip here: [http://bit.ly/MacGyverMap](http://bit.ly/MacGyverMap)). In the opening gambit of the episode, MacGyver uses the map in different ways, fully exploring its affordances to help him get out of various sticky situations: he uses the map as a sled to slide down a sand hill and escape his pursuers who are on foot; he uses the map as a blowpipe to distract a woman who was doing her washing so that he can steal some of the clothes to use as a disguise; he wraps an iron bar in the map and uses it as a weapon to disarm an assailant; he uses the map to retrieve a key that he pushed out of a lock, and slide it under the door so as to facilitate an escape from pursuers, and finally he uses the map to patch up a hole in the hot-air balloon he uses for his ultimate escape.

The point here is that MacGyver didn’t just use the map as the author of the map probably intended. His particular uses of the map facilitated many different outcomes and led to the goal – that of his escape. His use of the map was specific and in part dictated by his context and objectives. The opening gambit didn’t focus on the map as a device (tool) in its usual context, but focused on the specific actions that MacGyver put it to.

Strategy-As-Practice researchers and practitioners are similarly interested in the specific work of strategists: the local, micro work and their individual praxis.

Harvard Business School professor, Cynthia Montgomery (Favaro & Kleiner 2013; Montgomery 2012) makes the case for the practice element to be brought back into strategy making – especially in a leadership context – when she points out that the strategy field has developed into a largely analytical exercise, moving away from its early roots in understanding what it is that the strategist does: ‘Most notably, strategy became more about formulation than implementation, and more about getting the analysis right at the outset than
living with a strategy over time’ (Montgomery 2012, p.3) and compares the development of the strategy field to a Shakespearian plot:

‘As a field, we had hoisted ourselves on our own petard. We had demoted strategy from the top of the organization to a specialist function. Chasing a new ideal, we had lost sight of the value of what we had — the richness of judgement, the continuity of purpose, the will to commit an organization to a particular path. With all good intentions, we had backed strategy into a narrow corner and reduced it to a left-brain exercise. In doing so, we lost much of its vitality and much of its connection to the day-to-day life of a company, and we lost sight of what it takes to lead the effort.’ (p.3)

The following section provides an overview of the strategic management literature and outlines some of the main developments and contributions. A more detailed section follows this on the contribution of the Strategy-As-Practice field – which I’ve come to think about as being a MacGyverish use (context specific, focused) of the strategic management research agenda to help strategists do their work.

**Strategy and Strategy-As-Practice**

The (business) strategy field as an academic discipline has been developing over the past sixty years or so and as a result, a significant amount of research and related literature continues to accumulate. Over this period, there have been attempts to summarise the literature which provide interesting entry points into the discipline – a careful reader will be aware, however, that these are selected summaries and that they have their limitations and are constructed within a particular historical moment. Each development thus allows new lenses to be brought to bear through which to view the history and development of the discipline and whilst these summaries are valuable in their own right, they should not be relied upon as being complete or unbiased accounts. Whilst a complete accounting of all the literature falls outside the scope of this research, knowledge of the literature that does exist helps to locate the more recent Strategy-As-Practice writings within the field and allows for a more detailed consideration of the specific sub-field of literature that I am interested in. With
these caveats in mind, I submit the following section as a brief overview of the (business) strategy discipline.

**Overview of business strategy discipline**

In locating this work within the wider literature, I am seeking to ‘…draw on, and speak with those near us’ (Thompson, P 2013) and provide some landmarks for those who are further away. This introduction is not a detailed survey, but a mudmap drawn with an audience in mind who are reasonably familiar with the field – enough to navigate by and displaying the major points of interest. If you are already familiar with the literature in the strategic management field, you may wish skip to the Strategy-As-Practice section that follows.

For an excellent historical review of the strategy literature up until the turn of the century, two sources stand out: The first is the introductory chapter in *The Handbook of Strategy and Management* (Pettigrew, Thomas & Whittington 2002) and the second is an excellent article in the *Journal of Management* entitled ‘Theory and research in strategic management: Swings of a Pendulum’ (Hoskisson et al. 1999). Although other reviews exist (see, for example, (Bowman, Singh & Thomas 2002; Herrman 2005; Phelan, Ferreira & Salvador 2002; Ramos-Rodriguez & Ruiz-Navarro 2004), the Pettigrew and Hoskisson sources are widely cited, don’t restrict themselves to just one journal source and provide a broad overview which suits the purpose of this section. They therefore provide a solid base from which to begin this review of the historical antecedents of the Strategy-as-Practice field. Drawing on these and other sources, I will briefly sketch the main moments in the development of the strategic management research agenda and then proceed to provide a more detailed and nuanced review of the literature with a focus on the Strategy-as-Practice sub-domain and its development.
Strategic management: 1960s - 2006

Although strategic management is researched and practiced by scholars and consultants all over the world, each shaped by or helping to shape the field within their own unique context, generally it is agreed that ‘…it’s roots are in US academia and practice’ (Pettigrew, Thomas & Whittington 2002, p.5) and that the literature is overrepresented by American authors. Furthermore, there have been suggestions that the American literature developed more quickly and that in comparison to the strategic management field in, say, Europe and the UK, it is a decade or so ahead (Courtney 2002).

The early influence of the Harvard Business School on the development of the field of strategy is represented through the work of Chandler and Andrews who were both professors there during the 1960s (Pettigrew, Thomas & Whittington 2002). Alfred Chandler, of course, wrote the influential *Strategy and Structure: Chapters in the History of Industrial Enterprise* (1962), wherein he argued that the structure of a firm is a critical component of the strategy of the firm, albeit that Chandler believed that structure followed strategy. This view is neatly summarised by Hoskisson et al.:

‘Changes in strategy are mainly responses to opportunities or needs created by changes in the external environment, such as technological innovation. As a consequence of change in strategy, complementary new structures are also devised.’ (1999, p.422)

However, this concept was later challenged by writers such as Mintzberg and Walters (1985) and Pettigrew (1985), wherein they argue that strategy is not always just the result of external factors, but that the existing structure of an organisation will have a moderating effect on strategy formulation. Thus the question becomes not one of finding the best structure to facilitate a given strategy, but given the structure that already exists in the organisation, what strategic options are available?

Indeed, the field seems to be one of dualism and suffers from tensions born of its development. The rise of the academic literature in the field in the 1960s was quickly adopted by the consulting firms of which Pettigrew, Thomas &
Whittington (2002) identify McKinsey and Bain as being the main players. Thus a parallel stream of literature developed – a literature that is practitioner-based and was developed and used by the consulting firms in their engagements.

Furthermore, it appears that over the decades, the focus for research into strategic management has shifted from the attention being predominantly inward-looking (at such aspects as the internal processes of a firm, its goals and the role of management), to a more external focus on industry structure, strategic groupings of firms, networks and webs of firms and the competitive dynamics of organisational environments. Hoskisson et al. (1999) use the metaphor of a pendulum to great effect when reviewing the literature, pointing to the fact that the pendulum has swung from internal to external and seems to be swinging back again. Later, in the section on Strategy-As-Practice I will locate the literature within this arc of the pendulum and suggest that it represents the return to the beginning state.

The literature and tone in the early period of the field that originated out of the Harvard Business School was less positivistic and quantitative than that which came in the decades after. This is reflective of the general management tradition that dominated at the time, a fine example of which can be found in Corporate Strategy (Ansoff 1965) wherein one of the significant concepts of the book refers to Ansoff’s explication of his ‘decision rules’. Essentially, Ansoff contends that there are a set number of events and risks associated with those events as well as some events and associated risks that aren’t known at any point in time. He argues that for a majority of the events, based on their type and probability of occurrence, that routine administrative processes can be developed and therefore responsibility for those processes can be delegated down to middle-level managers. Where the organisation (or more particularly the managers) find themselves in a situation where they have little knowledge of the events before them or little ability to ascribe risk, this requires direct and last-minute input from the executives and thus can’t be delegated (Moore 2001). Thus, the performance of the firm is tightly linked to the ability of the managers to operate under fluctuating levels of uncertainty.
Methodologically the research undertaken during this time is centred around deep engagement with organisations and industries through the use of case work (for example with companies like General Electric (Waid, Clark & Ackoff 1956) and DuPont (Mueller 1957)). The aim was to provide examples of best practice for students and practitioners that could be adapted and used in their own organisations. This use of qualitative research methods and a focus on a limited number of firms meant that it was difficult to make generalisations from the findings. Hoskisson et al. (1999) point out, though, that generalisation was not really the aim of the research in the first place and that this may have contributed to the rise of more quantitative forms of research being undertaken in later decades. They note: ‘…the heavy emphasis on the case approach and lack of generalization did not provide the base necessary for continued advancement of the field’ (p.424). This is a perennial debate within the literature: how can small sample, fine-grained analysis be useful in a wider context? (For a perspective in this debate that suggests that this kind of research can be beneficial to a wider audience, see (Flyvbjerg 2006), and for an opposing view with a particular regard to strategic management research, see (Furrer, Thomas & Goussevskaia 2008).)

The launch in 1980 of the Strategic Management Journal (SMJ) coincided with and promoted a more analytical and scholarly approach to the field of strategic management (Pettigrew, Thomas & Whittington 2002). The SMJ is widely regarded as one of the preeminent journals in the field and is consistently ranked highly in the top tier of journals (Azar & Brock 2008).

This more analytical approach was well suited to the discipline of economics and the associated methodological approaches to research. Large, quantitative studies undertaken through the use of secondary sources (Hoskisson et al. 1999) such as databases (e.g. PIMS and COMPUSTAT) saw the field move towards IO (Industrial Organisation), and the focus of research moved from ‘inside’ the firm to ‘outside’. Nowhere is this more evident than in the work of Michael Porter. Porter’s seminal works Competitive Strategy (1980) and Competitive Advantage (1985) ‘…switched the gaze of the strategist from the
firm to the industry structure’ (Pettigrew, Thomas & Whittington 2002, p.7), and solidified the IO view of strategy: ‘…the influence of economics, particularly industrial organizational (IO) economics, on strategy research was substantial, and in terms of methodology, strategy research became much more “scientific”’ (Hoskisson et al. 1999, p.425).

During this research moment, the focus turned away from the firm and towards the industry as having the most significant impact on firm performance. For example, strategic groups within an industry became an area of development and focus. Work by Newman (1978) looked at the impact of strategic groups on industry performance, while Caves and Porter (1977) examined the impact of mobility barriers for firms wishing to move between strategic groups. Meanwhile, Porter (1979) was examining how the presence of strategic groups actually meant that industries were much more fragmented than originally thought. Industry level analysis became the new focus for scholars and practitioners and the use of tools such as the BCG Growth Share Matrix (Hedley 1977) and the GE/McKinsey Matrix (Hax & Majluf 1983) became popular. Other sub-fields that were linked to IO economics also developed, including game theory applications (Nalebuff & Brandenburger 1996) and competitive dynamics (Bettis & Hitt 1995).

The rise of Organisational Economics saw a swing back towards the firm being instrumental in the research agenda. Examples of the new directions in research can be found in the transaction costs economics field (Beccerra & Gupta 1999; Williamson 1981) and agency theory, which ‘…assumes that human beings are boundedly rational, self-interested, and opportunistic (Eisenhardt 1989), and managers will seek to maximise their own interests, even at the expense of the shareholders. According to agency theory, a firm is a nexus of contracts, and as such, the basic unit of analysis in agency theory is the contract’ (Hoskisson et al. 1999, p.435).

Towards the end of the last century, there were questions as to the efficacy of transaction costs economics (Slater & Spencer 2000), and with the growing emphasis of agency theory on the interaction between various agents within the
context of the organisation, Hoskisson et al.’s pendulum began to gain momentum as it swung back through the arc towards its point of origin.

The central role of the *Strategic Management Journal* cannot be underestimated in the development of the research agenda for strategic management scholars. ‘The summer and winter special issues of the *SMJ* [had] been crucial mechanisms to signal major changes and consolidating points in the field’ (Pettigrew, Thomas & Whittington 2002b), and so it was that the resource-based view (RBV) ‘…was recognized when Birger Wernerfelt’s (1984) ‘A Resource-based View of the Firm’ was selected as the best 1994 paper published in *SMJ*. The RBV emerged as ‘an important new conceptualization of the field of strategic management’ and is ‘one of the most important redirections of the (content of) strategy research this decade’ (Zajac 1995, p.169 and Hoskisson et al. 1999, p.473). For Hoskisson et al., this represents a further movement towards the internal perspective of research in the field.

Wenerfelt’s 1984 work was extended in 1991 by Barney, who developed the VRIN (Valuable, Rare, Inimitable, Non-substitutability) model for firm resources (Barney 1991) which was then extended again by Amit and Schoemaker (2005) who added extra depth to the four main dimensions of the RBV. Finally, Hoskisson et al. (1999) noted that there have been developments in the RBV research with sub-streams of strategic leadership, strategic decision theory and the knowledge-based view (KBV) of the firm.

With the swing back towards the kinds of research that utilised predominantly qualitative methodologies, a casual reader may be forgiven for thinking that the field has moved towards qualitative, subjective methodologies. This is not true. Whilst the strategy field does enjoy a plurality of ontological, epistemological and methodological positions adopted by scholars, in a comprehensive review of the strategy research from 2000–2006, Adcroft and Willis (2008) examined almost 4,000 articles across 23 of the major strategy journals and found that the ontological and epistemological position of the research as a whole was predominantly positivistic. More damningly, they made the claim that ‘…strategy research rarely makes any significant theoretical
innovations’ (p.313) and that the lack of reflection by strategy practitioners may be part of the problem: ‘Within the limited body of reflective work in the field of strategy research, there are two broad problems. First, reflections tend to be insular in both tone and content. Second, where they generate debate, it is rarely about the central theories or concepts of strategy’ (p.327).

Whilst not specifically looking at the content of the articles published, but rather trying to determine their underlying philosophical position, Adcroft and Willis had a few interesting things to say about the state of publishing in the field:

‘Across the sample there is a clear tendency towards positivist approaches to research and so it is likely that strategy is more often than not investigated using some kind of quantitative approach. However, whilst positivistic philosophies are more prevalent, they do not dominate the sample as just 55 percent of strategy research is positivist. This picture changes significantly, however, when we consider approaches to research on the basis of journal rankings (Table III). In the lowest ranked journals, just one in five articles is positivist in character compared to four in five in the 4 * journals. Across the middle ranked journals there is little to choose with 2 * and 3 * journals having similar levels of positivist content.

There are also significant variations across individual journals (Table IV). For example, in the five year period under consideration the Journal of Business published just one article that was not explicitly positivist and in the leading specialist strategy journal, the Strategic Management Journal, practically 90 percent of all articles were positivist.’ (2008, pp.326-327)

[Note: In this article, journal rankings range from a low of 1* to a high of 4*)

Understanding the nature of the field of strategic management requires not only an appreciation for its substantive content, but also an appreciation of the ontological (and philosophical) position of the field. The Adcroft & Willis research of 2008 helps us to understand what that ontological position may be. From this understanding, we can have regard for any emerging research trends at a more fundamental level and therefore be in a stronger position when thinking about the contribution of any literature to Hoskisson’s swinging pendulum.
So the swing ‘back’ of the pendulum is not complete and it appears that Hoskisson et al.’s position may have been marginally premature. However, with a slim majority of research being of a positivistic philosophical grounding (particularly in the more influential journals), it is not unexpected that a sub-field within the strategy research endeavour has developed that has strong subjectivist leanings and relies on more qualitative methodologies as a way of addressing gaps in knowledge that are difficult to explain through quantitative approaches.

To answer the question of ‘where to now?’ in the strategic management research agenda, Furrer, Thomas and Goussevskaia (2008) analysed over 2,000 articles published in *Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly* and *Strategic Management Journal* (*AMJ, AMR, ASQ* and *SMJ* respectively) over the 26-year period of 1980-2005, seeking to identify the major trends in strategy journal article publications and to attempt to divine the future near-term direction of the field. Where previous studies had utilised qualitative approaches to interpreting the field, this study utilised a quantitative approach to analysis, seeking to add depth to the range of studies of this kind and to provide a complementary perspective. By developing a typology of major themes (keywords), the authors were able to categorise each of the 2,125 articles examined, and in a departure from previous studies – which have tended to examine only the literature around one main theme – sought to allocate more than one keyword to an article where it was appropriate. The authors then utilised Multiple Correspondence Analysis to interrogate underlying structures within the data and arrive at two dimensions:

*The two dimensions of the map...which emerged from the MCA can be interpreted as follows. The first, horizontal, dimension separates keywords emphasizing corporate-level strategy (on the left) from those concerned with the concept of strategy as fit (on the right). The second, vertical dimension separates keywords focusing on competitive strategies (at the top) from those focusing on managers’ strategic role (at the bottom). The dimensions of the map reflect characteristic ‘poles’ of topical orientation within strategic management.’* (Furrer, Thomas & Goussevskaia 2008, p.8)
Once the dimensions had been established, it was a simple matter of locating the literature (as represented by the keywords) on the graph to establish a ‘map’ of strategic management literature.

Why I think this study is more interesting than most of its ilk, lies in the fact that the authors were not only able to establish the state of the strategic management literature, but were also able to establish trends within the field over time. Their conclusions, I feel, are best summed in the words of the authors themselves:

‘In our analysis, we identified an evolution shown in the direction towards an integration of the corporate and competitive levels of strategy, which should transcend the notion of hierarchy of strategies. Therefore, future research questions should be related to the integration of corporate and competitive strategies and its implication for firms’ performance and competitive posture.

Developments in this direction can also benefit from greater cross-fertilization of the field with other disciplines. Barney (1991) has argued that the rise of the resource-based theory of the firm offered new opportunities to bring more organizational theory into the strategy domain to help disentangle the origins and development of socially complex competitive resources such as trust, change and choice, capability and creativity. Thus, we already can observe a narrowing of the dichotomy between economic (at the corporate level) and behavioural science (at the competitive level) approaches to strategy with thinking in economic terms being enriched by the identification of complementary behavioural questions and issues.’
(Furrer, Thomas & Goussevskaia 2008, p.16)

So, where the Adcroft and Willis (2008) research indicated a largely positivistic approach to strategic management research, the Furrer, Thomas and Goussevskaia (2008) research instead points to a trend of the field moving from a structure that more recently has been dominated by the positivistic approaches to research (largely as a result of the IO perspectives on strategy) and where large-scale quantitative studies can be instructive, towards one where research that is based in the behavioural sciences (and often relying on qualitative research methodologies) can be helpful.
This movement towards more qualitative methodologies also goes some way to narrowing the gulf that had been developing between academics and practitioners (represented by theory and practice research).

The call for the field to become more relevant to practitioners whilst at the same time remaining theoretically sound is one that seems to be gaining momentum with some authors. Tranfield, Denyer and Smart (2003) bemoan the fact that theory is increasingly seen as irrelevant to practitioners and that as a result, practice becomes un-theorised and therefore invalid while Jarzabkowski and Wilson (2006) point out that theorising is not enough for practitioners, but that the theory has to be converted into artefacts that practitioners can use. Their examples include ‘…positioning frameworks, matrices such as the Boston Box or environmental scanning tools such as the PESTEL analysis’ (p.349) as well as some 31 others, listed and sorted by ‘school’ on page 358. Even then, they admit that the ‘…categorisation is by no means exhaustive’ (p.357).

It is in this translation process that theory becomes more useful for practitioners and their attention turns towards using the artefact, even if they are unsure of how it is supposed to be applied. They contend that the modelling of theory ‘…represents a step in the process of dissociating knowledge artefacts from their theoretical bases’ (Jarzabkowski & Wilson 2006, p.360), thereby at once acknowledging that turning theory into an artefact is a good thing for it allows theory to become used in practice, but noting that the very act of turning the theory into an artefact could enhance the risk that the theory is used inappropriately and therefore reduce it’s potential maximum utility. This point is also well made by Knott (2006).

It is at this point in the strategic management research agenda that we see a push from authors for the two main streams of writing in the field (those of academic and practitioner-focused) to become unified – a task that the Strategy-As-Practice sub-field is well placed to address.
Strategy-As-Practice – an overview

In this section, I turn to the literature in the Strategy-As-Practice sub-field in more depth. I argue that the ‘practice turn’ in the research agenda almost completes Hoskisson et al.’s (1999) swing of the pendulum back to its original position of being mostly concerned with a predominantly inward-looking perspective of organisations that gives primacy to managerial actions in strategy-making, rather than external industry structure. This is as the early strategy scholars of the 1960s articulated it. After a very brief overview, I tackle this body of literature in a loosely chronological fashion, charting the main developments in the (sub)field and the various perspectives that Strategy-As-Practice researchers have adopted. After this mapping of the literature, I argue that there exists a gap in the literature that has not been entirely addressed by researchers in the Strategy-As-Practice field. This gap relates to what I’ve called ‘epistemic technologies’. This thesis argues that epistemic technologies are a useful way for strategists to conceptualise both the process and the content of their thinking practices and that they also offer a shared language for teams to use when strategising.

The Strategy-As-Practice (SAP) sub-field has been growing strongly since the middle of the last decade, although its roots date back to the 1970s with such authors as Mintzberg (Mintzberg (1973) and Mintzberg & Waters (1985) and Pettigrew (1973, 1985). The SAP field takes a pluralistic approach to engaging with theory and is characterised by a range of approaches to research as evidenced by its members and the kinds of research they have undertaken (Johnson, G et al. 2007).

Recently (and gathering momentum since the 1980s), there appears to have been what some are calling a ‘practice turn in current strategy research’ (Whittington 2006, p.614) [see also (Golsorkhi et al. 2010); and for a broader discussion on the practice turn in general, (Ortner 1984; Reckwitz 2002; Schatzki 2001)], where the research has turned towards focusing on what it is that strategists do, whilst at the same time having regard to the ways in which what they do has an impact on the larger society (environment). Johnson et al.
conceptualise this in a model that represents this micro-macro perspective by indicating that what individuals do at the micro-level ultimately shapes organisational strategies, which in turn can influence institutional practices and structures. Similarly to the way in which the actions of managers can have an impact on the organisational and macro-level practices of strategy-making, the institutional and organisational forces that operate have an impact on the actions of managers. The link is bi-directional in nature. Researchers within the Strategy-As-Practice field generally agree that there is a recursive link between what strategists do in their everyday work and institutionalised strategies (Johnson, G et al. 2007). However, research in the field seems mostly concerned with the micro-practices of strategists and their everyday, ordinary work (Johnson, G, Melin & Whittington 2003), even though there has been a consistent call for more research into ‘...how activities are embedded in broader societal or macro-institutional contexts’ (Vaara & Whittington 2012, p.286).

Johnson et al.’s (2007) view of the Strategy-As-Practice agenda seems to have been widely accepted, yet there are a few notable exceptions (Carter, C, Clegg & Kornberger 2008; Carter, C & Kornberger 2004; Chia 2004; Chia & Holt 2006; Chia & MacKay 2007; McKiernan & Carter 2004; Rasche & Chia 2009), who argue that Strategy-As-Practice researchers and practitioners do not go far enough (Chia & MacKay 2007), or that they do not differentiate themselves enough from already existing streams of research (e.g. Carter & Kornberger (2008)). One of the main positions that some of these scholars take is that the centre of research endeavours should not be on documenting and understanding the micro-activities of strategy practitioners but that the ‘...social practices themselves...’ and the ‘...practice complexes...’ form the theoretical basis from which all subsequent analysis can be conducted (Chia & MacKay 2007, p.217-18). What Chia and MacKay are advocating here is that the micro-practices of strategists should be examined as being constituent parts of the larger social forces that operate – essentially shifting the centre of the research efforts away from micro-practices and refocusing attention on the much larger macro/social levels of analysis. There have also been criticisms that when the
Strategy-As-Practice researchers do invoke social theories of practice, they don't do it very well. In particular, Hurtado (2010) is quite critical of Whittington's (2006) use of Bourdieu. I will address these views later, but for now, it may be helpful to sketch the development of the Strategy-As-Practice research agenda.

**A more detailed tour**

I would argue that Richard Whittington has had the greatest impact on the Strategy-As-Practice sub-discipline, with an extensive list of articles, books, chapters and conference papers published in the area. It is widely accepted by scholars in the field that his (Whittington 1996; and Whittington 2006 and his co-authored Johnson, 2003) papers representing defining moments in the development of the discipline as a serious area for study. Whittington's 1996 paper called for further research into the Strategy-As-Practice field, identifying it as underrepresented in the strategic management literature, whilst his 2006 paper provides a theoretical structure through which to undertake that research. Outlining three basic levels of analysis, Whittington (2006) suggests ‘praxis’, ‘practices’ and ‘practitioners’ (p.620) as an organising structure and locates these concepts within the major themes of social theory and management research more generally. His basic premise is that there needs to be a tighter integration between how practitioners actually do strategy and the wider concept of strategy – essentially, he is trying to link the micro (local) level praxis with the more macro (global) view of practices.

To support his claim, Whittington makes mention of seminal sociology authors (Bourdieu 1990; De Certeau 1984; Foucault 1977; Giddens 1986) whom he says are all basically concerned with the same idea (although in slightly different forms), that of the dualism between individualism and societism, wherein the ‘...individualists attribute too much to individual human actors, neglecting macro phenomena, while scientists are over-impressed by large social forces, forgetting the micro’ (Whittington 2006, p.614). Whittington states that the ‘practice turn’ is incomplete, and that as yet there has not been a satisfactory linking of the micro and macro. Seizing on this point, Chia and MacKay (2007) extend a further criticism of the Strategy-As-Practice field
generally and with Whittington’s position specifically, essentially arguing that even though Whittington recognises the presence of such a dualism, that his model doesn’t go far enough to recognise that the praxis, practices and practitioners are all a product of ‘practice complexes’. To be fair, such criticisms have come only after Whittington and his contemporaries have tried to sketch out the main elements of a developing field and the criticism that has come subsequently can be viewed in the light of healthy academic debate seeking to strengthen the field. However, as other academics enter the debate, the theoretical waters can become muddied and a clear agenda for the Strategy-As-Practice field becomes increasingly difficult to find.

While the Whittington (2006) model proposes a way to conceptualise how these areas may be brought closer together, and whilst it is quite a complex model in its own right, I don’t think that it adequately accounts for the practice elements of what he claims are a gap. In his 2006 model, he tends to treat praxis, practices and practitioners as equally important, preferring not to privilege one over the other, but disregards the larger contextual social forces that may have contributed to the praxis and practices of practitioners. In this, I find myself agreeing with Chia and MacKay’s criticism, but I have concern with moving the research too far out of the reach of the immediate needs of practitioners. As I will indicate later, I’m not alone in this concern.

Building on his earlier work, Whittington continues to promote the idea that the micro-practices of strategists are important, and he develops this idea further in a book that he co-authored with Gerry Johnson, Ann Langely and Leif Melin – *Strategy as Practice: research directions and resources* (2007). Here, specifically, the research agenda of the Strategy-As-Practice sub-field is developed and a clear call for linking micro-practices and the organisational and institutional processes and routines is made. The authors see the Strategy-As-Practice field as providing a rich research opportunity involving a ‘plurality of actors’ (Johnson, G et al. 2007, p.13), a ‘plurality of dependant variables’ (p.14) and a ‘plurality of theories’ (p.15), but are also cognisant of the risk associated with research that is too focused in the micro-activities of practitioners: ‘Many
Strategy as Practice researchers so far have concentrated on the activities of the micro level of strategy process. However, “an exclusive focus...[here]...will ultimately prove unproductive...” (2007, p.26), as without links to the other concerns of strategy (the organisational level and the institutional levels), this kind of research runs the risk of being ‘...both hard to explain and empty of impact’ (p.26).

Others may feel the same. Indeed, there have recently been papers published on the specific micro-practices of strategists in specific settings [see, for example (Jarzabkowski & Seidl 2008; Jarzabkowski, Spee & Smets 2013; Johnson, G, Melin & Whittington 2003; Kaplan 2011; Kaplan & Jarzabkowski 2006)]. However, these papers suffer from the linking issue that Whittington raises, and in my opinion they don’t seem to adequately link the micro to the macro; nor do they complete the practice-turn. This is not to say that they don’t advance the research agenda of the Strategy-As-Practice field; it’s just that they fall short of the calls by Whittington (2006) and Johnson et al. (2007) to explicitly approach the challenge of the ‘...bifurcation between intra-organisational activity and extra-organisational aggregation’ (Whittington 2006, p.613).

This multi-level perspective on strategy-making was foreshadowed by Jarzabkowski (2004), when she wrote that Strategy-As-Practice occurs at three levels: that of the individual (and as such as a cognitive approach), at the organisation level and at the social institution level. However, this stands in contrast to the work she later produced, some of which I review later in this section. It may be, as Johnson et al. (2007) predicted, that doing this kind of research in a manner that satisfies the call to link the main levels of strategy within the field is difficult and requires creativity when thinking about ‘...bounding of appropriate units of analysis, sampling, access and ethics, appropriate data sources and ways of linking data to theory’ (p.28).

So how have academics who are interested in this sub-field responded to the calls for a specific linkage between the ultra-micro practices of managers and the supra-macro forces such as Chia and MacKay’s ‘practice complexes’ (2007)?
Early in the development of the field (2006), there was agreement that there are supra-organisational forces that operate in/on the strategy field. The Strategy-As-Practice field recognised this, with some academics looking to understand how these dynamics operated:

‘To summarize and generalize, the strategy-as-practice research on the supra-organizational level is directed towards understanding the nature of the forces outside organizational boundaries, which shape the strategy content and strategy process.’ (Valmra et al. 2006, p.26)

The (Valmra et al. 2006) work sought specifically to build on the proposed Johnson, G, Melin & Whittington (2004) model (re-published in (Johnson, G et al. 2007)), and aimed both to explore how the institutionalised aspects of strategy formulation impact the actions of the practitioners, and to answer the question of how the actions of practitioners impact the organisation’s strategy processes.

But even as there were calls for a continuation of this micro-macro linking research, other authors jumped at the chance to examine just the micro-practices of strategists, whilst downplaying or even ignoring the role of larger, social perspectives. Kaplan and Jarzabkowki (2006), for example, chose to look at how managers use strategy tools as a means of dealing with uncertainty and how those tools act as boundary objects-in-use. Here, the thrust of the research was to determine how managers use well-defined and familiar strategic analysis tools within specific social practices to deal with uncertainty and to ‘…generate meaning about strategic actions…define the boundaries of their own actions, and how they construct their expectations about the input of other actors’ (p.14). This research is focused at the individual (and to a lesser extent, the organisational) level. Indeed, around this time in the development of the field, much research examined the micro-level of strategising rather than looking at the larger, social practice field that these activities sit within. Jarzabkowski and Wilson (2006) examined the link between strategy theory and actions taken by practitioners, invoking a Strategy-As-Practice perspective in trying to understand how it is that managers use ‘…knowledge artifacts, such as strategy tools and frameworks…’ (p.348), whilst Hodgkinson, G, et al. (2006) looked at
strategy workshops and away days, as did Whittington et al. (2006) (although in the latter case the research also examined the ‘...deliberate use of symbolic artefacts for communicating new strategies and organisations’ (p.616) – focusing more on the micro-practices of managers. Even in papers where it would be expected that some consideration would be given to the larger social practices (even institutionalised practices), analysis seemed to reside at the individual or at the organisational level only. A good example is the research of Jarzabkowski and Fenton (2006), who looked at organisations that operated in pluralistic contexts, those ‘...typically shaped by the divergent goals and interests of different groups, each of which have sufficient power bases to ensure that their goals are legitimate to the strategy of the organization’ (p.631). Here, where one would expect an examination of the larger, social practices that shape strategy-making praxis in organisations, the authors chose to focus closely on the case study organisations and through this, attempt to categorise managerial actions that can help tighten the link between strategising (sic) and organising.

2007 saw a continuation of attempts by various researchers to codify and shape the Strategy-As-Practice research agenda. Notable contributions came in the form of articles that looked at the state of the Strategy-As-Practice field and reiterated the ‘overarching conceptual framework of praxis, practices and practitioners’ (Jarzabkowski, Balogun & Seidl 2007, p.5). Denis, Langley and Rouleau (2007) picked up on the theme of undertaking strategy in pluralistic contexts and set out to provide a solid theoretical basis for future Strategy-As-Practice research. Crucially, their work sought to specifically address the issue of the larger, social practices within which strategy operates. Examining the ‘practices’ element of Jarzabkowski’s overarching framework, Gray (2007) looked more deeply into why it is important for managers to adopt a reflective attitude and made it clear why this resonated with the Strategy-As-Practice research agenda:

‘A retrospective focus on the past needs to be replaced by the practice of reflection as an integral part of day-to-day management (reflection-in-action). Management action will generate knowledge
about power relationships in organizations and this knowledge will provide further (collective) opportunities for reflection (social reflection-in-action) and further political activities or decisions."

(p.497)

The micro-practices of strategists (and managers) hold a particular fascination for the Strategy-As-Practice researcher, but since the phenomena can be readily observed and theorised, it is easy to focus on those only. As a reaction to the tendency to focus on the micro-practices of managers (even if observed over a long period of time (e.g. Pettigrew 1985)), Whittington (2007) sought to draw more starkly the distinction between Strategy-As-Practice and the processual view (one that ‘…centres on the collection of longitudinal data over periods of real and retrospective time’ (Dawson 1997)). This can be seen as an attempt by one of the heavyweights in the Strategy-As-Practice field to help shape the future direction of the research agenda, and to return to some of the foundational idea of Strategy-As-Practice. Specifically, Whittington seeks to emphasise the importance of incorporating the broader sociological perspective into the study of the micro-practices of strategy making:

‘The sociological eye, on the other hand, encourages us to see strategy in all its manifestations, and as both widely connected and deeply embedded in particular societies. Through this lens, the minutiae of strategy are likely to have unexpected significance, while strategy as an institution may be prone to problematic consequences. The organization is de-centred, and people, practices and societies enter equally onto the stage. In this sociological sense, strategy entails a broader perspective than simply Process. In particular, I shall argue, Practice is much less focused on either organizations or change over time.’ (2007, p.1578)

It seems that even by the end of 2007, the tussle between researchers who wanted to take an ultra-micro perspective on Strategy-As-Practice and focus on day-to-day activities (for example, in strategy teams within multi-business corporations (Paroutis & Pettigrew 2007)) or the role of informal strategic conversations between different management levels within a ‘large public administration’ (Hoon 2007, p.923)), and those who wished to take a broader look at the field through a sociological lens was still on-going.
The Strategy-As-Practice field by this time had begun to attract the attention of scholars who were interested in pluralistic approaches (both methodological and theoretical). It was the year in which Chris Carter, Stewart Clegg and Martin Kornberger took the opportunity to question the Strategy-As-Practice developing agenda in an editorial essay within *Strategic Organization* (Carter, C, Clegg & Kornberger 2008). This was a turning point for the field, and the authors took the opportunity to clearly state their appreciation for the work that had gone before, but adding that they regarded it as the “first wave” of the strategy as practice literature’ and then seeking to broaden the debate, asking for ‘…a more reflexive and critical perspective of the phenomenon’ (p.84). This reiteration of the call for a more sociological perspective of the Strategy-As-Practice research agenda continues to provide an anchor point at one end of the micro-macro unit of analysis continuum, reinforcing the idea that strategy (including the Strategy-As-Practice practitioners) are best served when the larger, sociological forces that act on the field are also considered.

Even though the call for a more critical approach was not new, the intensity with which the call was being made had increased. The Carter, C, Clegg and Kornberger (2008) editorial was unapologetic in seeking to advance a more philosophical and critical edge to the Strategy-As-Practice agenda, and was scathing of the focus on only micro-aspects of what strategists do:

‘Thus, strategy conceived in research terms as practices that focus solely on that which strategists said and did will miss the strategic spaces within which strategy is constituted. What is necessary is to explore not only what is done but what is not done, that which is not practised, that which is not said, using external stakeholder articulations as signs of what might be but is not. Especially useful here will be those stakeholders that deliberately take an oppositional stance to existing strategy: the eco-warriors, the NGOs and so on. It is from these stakeholders that strategic innovations will emerge.’ (p.94)

In the same edition of *Strategic Organization*, Jarzabkowski and Whittington (2008a) set out to counter the arguments put forward by Carter, Clegg and Kornberger (2008), suggesting that Carter, Clegg and Kornberger had missed important aspects of the research that was being undertaken by Strategy-As-
Practice practitioners and that some of the concerns raised by Carter, Clegg and Kornberger had indeed been addressed. This notwithstanding, on some issues they did agree, saying:

‘We would like to end on where we do see novelty in Carter et al.’s review. They point to the danger that focus on what strategists say and do will lead to the neglect of that which is not done, not practised, not said. We agree: the practice turn’s concern for what strategists do could be misinterpreted as a literal and narrow-minded empiricism. What we write of as ‘practice’ should not be read simply as ‘reality’; we should attend to the significance of that which is not enacted into practice, as well as that which is. But here Carter et al. will find the ground well prepared. Jarzabkowski (2005) specifically distances strategy as practice from positivism and the practice theorists on which strategy as practice researchers draw are typically concerned not with an objective reality, but with lived experience and the mutual constitution of actors and their worlds. As Jarzabkowski et al. (2007) make clear in their introduction to the Human Relations special issue, strategy as practice is open to a range of theoretical positions, including critical approaches such as that of Carter et al. We hope, therefore, that they will provide more guidance on the practicalities of investigating the intriguing topic of strategy non-practice and we look forward to seeing their eventual research.’ (p.104)

So whilst defending their earlier work, Jarzabkowski and Whittington (2008a) called for a continued engagement with pluralistic theoretical positions, and whilst not dismissing the contributions of critical theorists as being too narrow, invited them to engage more deeply with the field and help shape it.

Since this time, the field has remained fractured. As the battle over defining the scope of the agenda and the theoretical approaches of the Strategy-As-Practice field raged in Strategic Organization, other authors continued to research and publish and sought to add their own voices and perspectives. 2008 saw articles on topics as diverse as strategy workshops and their effectiveness in relation to strategic change programmes (MacIntosh, MacLean & Seidl 2008), the role of three-dimensional objects in the building of metaphors for strategy (Heracleous & Jacobs 2008), the role of meetings in the social practice of strategy (Jarzabkowski, Spee & Smets 2013) and how the Strategy-As-Practice field could bridge the divide between theory and practice and provide (management) students with a deeper understanding of the messiness
of strategy formulation (Jarzabkowski & Whittington 2008b). Other contributions included the work by Statler, Jacobs and Roos (2008), wherein they sought to bring a new analytical lens (that of analogical reasoning) to the Strategy-As-Practice field (an approach that focuses unashamedly on the micro-practices of strategy), and work by Kaplan (2008), examining the role of cognitive framing by organisational actors in strategy-making.

It was as if the field took a collective breath in 2009 when only a few papers were published that were directly relevant to the Strategy-As-Practice research agenda. What is interesting about this period, however, is the continued development of a relatively unexplored stream of research that examined the use of material objects in the strategy formation process – particularly in the visual representation of strategy. This work seemed to pick up on some of the weak signals (Day & Schoemaker 2004, 2005; Haeckel 2004) from the earlier, more ‘fringe’ work in strategy visualisation – particularly the work into strategy roadmaps by Blackwell et al. (2008). Eppler used four case studies as the basis for promoting the idea that visualisation techniques can help managers undertake the strategy process (Eppler & Platts 2009) and frame their work in terms of answering the four basic questions of strategy visualisation:

1. ‘Why should managers use visual methods? What are the benefits that they can achieve by applying them?’

2. ‘When should managers use visualization methods in the strategy process? In other words: In which situations should managers make use of which type of visualization?’

3. ‘What visualization-based methods can be tailored to strategizing? They must be easy-to-use, and have proven benefits.

4. ‘How should managers use these interactive visualization methods? What are some of the challenges and pitfalls of using graphic methods in strategizing?’ (pp.46-9)

This work is similar to my own work in that it seeks to understand how various visualisation techniques can help strategists do their work. Where this research and mine differs is in the ways in which the research is framed. The
Eppler and Platts work looks to visualisation techniques as a means of helping managers to communicate with each other, where ‘…visualization is understood as a participatory process and as interactive communication rather than as a static graphic rendering of outcomes’ (2009, p.42). My research looks to the ways that individual managers can combine elements of mapping to help better understand their own strategic thinking practices (this is not to say that undertaking the mapping collaboratively whilst making explicit the underlying epistemic machineries and their specific combination (the epistemic technology) isn’t possible, it’s just not the focus of my research). Also the Eppler and Platts work looks to a plurality of forms of visualisation, trying to identify what the specific attributes of form (e.g. of a successful ‘strategy roadmap’) are, whereas my research eschews any particular prescription of form, allowing the strategist to focus on the construction of knowledge.

The growing body of knowledge in the Strategy-As-Practice field and the diversity of research being undertaken meant that at some stage a consolidating piece was required. This can be found in the work of Jarzabkowski and Spee (2009), wherein they sought to categorise the various streams of research into nine typologies, further refine the founding definitions of practices, praxis and practitioners and finally suggest a way forward, further refining the research agenda and trying to distinguish itself from other, related streams of research (most notably the processual approach). Within this work, Jarzabkowski and Spee identify that there are three levels of research being undertaken – those of micro-, meso- and macro-level analysis. This goes some way to closing the gap (e.g. between the different approaches between the micro-analysis of individual praxis and the macro-analysis of social practices), but in doing so it focuses on the organisational level as being the important meso unit of analysis:

‘Domain B clusters papers that explain individuals’ engagement in organizational or sub-organizational praxis. Depending on the focus of study, authors looked at how what individuals do shapes how the organization does strategy (e.g. Rouleau 2005) or shapes what sub-organizational units, such as a business units, do (e.g. Stensaker and Falkenberg 2007).’ (p.75)
So whilst the Jarzabkowski and Spee (2009) work is an interesting clarification of the research (it builds on the model found in Johnson et al. (2007)), it doesn’t complete the practice turn as identified by Whittington (2006). Jarzabkowski and Spee (2009) note, however, that this is typical of the field and that whilst there are theoretical papers that call for this particular type of analysis, at this stage of the development of the field there are very few empirical papers:

‘There has, however, been little empirical consideration of a number of practices that are proposed in the theorizing of strategy practices. For example, much theoretical work has noted the widespread diffusion of management and education practices, such as the various strategy tools, techniques and concepts typically taught in classrooms and textbooks (Jarzabkowski 2004; Seidl 2007; Whittington 2003, 2006a; Jarzabkowski and Wilson 2006), but there has been little empirical attention to either the actual diffusion of these practices or of how these practices are engaged in or constitutive of strategy praxis. Other papers conceptualize the embedded cultural and historical practices that shape the practices available for strategists to draw upon and also constitute the possibilities for being a strategist (e.g. Chia and Holt 2007; Chia and Mackay 2007). However, little empirical attention has been paid to how such practices comprise resources or their implications for the way that strategists act within their worlds. Indeed, it is through these embedded practices that practitioners and academics may account for strategy as a concept, a form of work (Carter et al. 2008) and, potentially, a profession (Whittington 2007), and yet this area remains under-explored. This is, in part, related to the lack of empirical work at the macro level of Figure 1, where little attention has been paid to the interplay between institutionalized strategy practices and the actions and interactions of strategy practitioners.’ (Jarzabkowski & Spee 2009, p.83)

Ironically, and as if to underpin Jarzabkowski & Spee’s (2009) point, Rasche and Chia (2009) published a theoretical paper that focused on the macro-level, again trying to make a case for greater attention to be paid to the underlying social practices that inform the strategy field and to which Strategy-As-Practice researchers claim to be sensitive to. In this theoretical paper, Rasche and Chia attempt to highlight the importance of appropriate methodological approaches to investigate ‘…the contextual and hidden characteristics of strategy-making’ (2009, p.713) and suggest that ethnographic methods may be best suited to do
so and in drawing on the work of Hammersley and Atkinson (1983), explain that an ethno-methodological approach involves:

ʻ...a process where the researcher ‘participates, overtly or covertly, in people’s daily lives for an extended period of time, watching what happens, listening to what is said, asking questions; in fact collecting whatever data are available to throw light on the issues with which he or she is concerned’ (Hammersley and Atkinson 1983: 2; emphases added).ʻ (Rasche & Chia 2009, p.725)

Immersing oneself in an organisation for an extended period of time obviously raises some challenges for researchers and this might explain why ‘...extended participant observation is not a much-used instrument for research yet’ (p.726) and also might provide some insight into the observation by Jarzabkowski & Spee (2009) that there is little research undertaken at the macro-level of the strategy field.

The turn of the decade saw a significant amount of research published in the Strategy-As-Practice domain that seemed concerned with trying to establish the philosophical underpinnings of the field with a particular emphasis on trying to get to a definition of what ‘practice’ actually means. Different authors, predictably, took different approaches to answering this question.

In tackling the largest of questions for the strategy domain, Bakir and Todorovic (2010) attempted to answer the question of ‘what strategy is’ through a hermeneutical reading of authorial texts, the result of which is a definition for strategy that is complex and lengthy:

ʻThus, our hermeneutic reading of authorial texts from various schools and paradigms reveals that strategy is a series of intended, partly instrumental and partly interpretive activities that are goal directed and require resource deployment. However, the extent to which these goals are achievable depends on the nature of the means-end relationship. When this relationship is direct and clear, characteristic of non-interactive environments, the goals can be achieved through instrumental rational calculation in the form of “planning”, “positioning” and “rational decision making”. In these environments there is, on the whole, little room for cultural interpretation, and the determining strategy paradigms that operate in an interlinked way are the “organization’s capability-building” and “individual and group psychology of organizational agents”; the
expected outcomes are generally those that were originally intended. When, on the other hand, the means-end relationship is ambiguous, characteristic of interactive environments, instrumental rational strategies give way to substantive rational ones which are focused on interpretive action. Here, strategy formation can be viewed as processual – “muddling through”, “incrementality”, “organized anarchy”, and “strategy-as-practice”; systemic – “social action”, and “complexity”; and discursive. The interlinked paradigms that operate as strategy determinants in these environments are: “capability-building”, “natural selection”, and “the social and cultural context, including individual and group psychology of organizational and market agents”. In these complex environments, the goals persistently shift and change as a result of interactions, and the outcomes are predominantly emergent. (p.1050)

This definition seeks to account for the multiple perspectives that appear in the literature and attends to the claims of the Strategy-As-Practice field that to understand how strategy is done in practice, consideration needs to be had for the larger, invisible social practices within which the activity is occurring. This thesis seeks to address this by helping strategists to realise that the way in which they undertake their thinking praxis is mediated by the cultural and historical moment within which they find themselves.

Samra-Fredericks (2010) in particular spends considerable time exploring the silences in strategy-making, highlighting that fact that the field fails to adequately account for social theories and that this was especially so in the early stages of its development. She contends that the early development of the strategy field is through social processes, many of which even if understood, are largely ignored in subsequent research other than in the ways in which they seek legitimisation from the field:

‘The outline of the history and dominance of SM’s rationalist/quantitative orientated methodology and allied ontological presuppositions by both Hambrick and Chen (2008) and earlier by Hoskisson et al., (1999) begins to call attention to the particular ‘I’s’ who accomplished this – they had mobilised social and symbolic capital and utilised their friendship ties. They are themselves a social product as both Reimer and Wright Mills assert and enact their world accordingly. This could also be applied to other (sub)fields/traditions, including the recent emergence of the ‘strategy-as-practice’ community.’ (p.420)
Here, Samra-Fredericks is calling attention to the fact that the formation of the Strategy-As-Practice (sub)field is a product of social processes and it is through this process that a particular perspective is adopted – and that others who follow the Strategy-As-Practice agenda would do well to recognise that they are equally a product of this.

Returning to Jarzabkowski & Spee's (2009) typology of micro-, meso- and macro-levels of analysis in strategy research, Vaara (2010) seeks to introduce discursive analysis into strategy and the field of strategy-making and goes on to claim that ‘...if we take the potential of discursive analysis in its various forms seriously, we will be able to broaden and deepen our understanding of strategy as an important social and societal phenomena as well as the organizational activities and practices that are associated with it (p.30). This can be seen as an attempt to link the micro-practices of strategists with the larger social worlds that they live (and work) within, as analysed through the language that strategists use. Whilst this is not the first time that close attention has been paid to strategists’ language and how it is used to manage social relations and its influence on strategy-making (for example, see (Samra-Fredericks 2003) this paper does indicate a growing interest in the way in which language is used in organisations involved in strategy-making. We see this theme picked up again later by Spee and Jarzabkowski (2011), who look at strategic plans as communicative devices, by Cornut, Giroux and Langley (2012), who look at strategic plans as genres, and in work by Fenton and Langley (2011), who investigate the use of narrative in the Strategy-As-Practice field.

All this points towards a developing sophistication in the Strategy-As-Practice research agenda and in the developing theoretical perspectives of the researchers who are involved with it.

In a more organised response to the earlier criticisms that the Strategy-As-Practice field was not successful in linking the wider, social practices of strategy with the micro-practices of action undertaken by strategists, 2010 saw the publication of *The Cambridge Handbook of Strategy As Practice* (Golsorkhi et al. 2010). Here, the editors expressly refer to some of the ranges of criticism of
the field and state that they have crafted the handbook to be in part a response to some of those criticisms:

‘However, others have criticized the predominant definitions and approaches to Strategy as Practice research. In particular, Robert Chia and his colleagues have provided alternative perspectives on the analysis of strategy (Chia and MacKay 2007; Rasche and Chia 2007). Rather than building on the proposed frameworks, they criticize current research for its lack of distinctiveness and call for a more focused approach which breaks away from the methodological individualism that still dominates Strategy as Practice work. In addition, Clegg, Carter and Kornberger (Clegg et al. 2004; Carter et al. 2008) have critiqued the conceptual and methodological bases of much of the research in this area. In a nutshell, they have argued for more theoretically advanced and critically oriented studies to explore fundamental issues of identity and power. This critique served as a key motivator for the expansion and development of the Strategy as Practice research agenda in this handbook.’ (pp.9-10)

The Cambridge Handbook of Strategy As Practice seeks to lay out the past and future directions of the field in four broad ways: first, the handbook includes contributions on the ontological and epistemological perspectives on the sociological approach to the idea of ‘practice’ and to the Strategy-As-Practice field specifically. Just as there is no one universally accepted definition of ‘practice’, we see contributors take different philosophical perspectives on practice and this then leads to similarly disparate epistemological conclusions. For example, Chia and Rasche (2010) draw on the work of Bourdieu when they construct their building and dwelling world-views, explaining the building worldview as relying on the ‘cartesian split’ (p.34) of body and mind, and therefore explaining strategy action as being a process that is enacted outside of the body and ‘…wider social interactions and social practices’ (p.35), whilst explaining their dwelling worldview as one where strategic action occurs within those realms.

By contrast, Tsoukas (2010) takes a Heideggarian perspective on Strategy-As-Practice and its philosophical underpinnings, arguing that a de-centring of the organisation ‘…shifts the focus from the activities within particular organizations to the historically and culturally transmitted fields of sociomaterial practice that are constitutive of those activities.’ (p.62)
Secondly, the *Handbook* looks towards the theoretical constructs that underpin the various perspectives in the Strategy-As-Practice field, with chapters devoted variously to the perspectives of Foucault, Wittgenstein, Giddens and Bourdieu.

Thirdly, contributors drill down and seek to provide advice as to methodological approaches that can be taken when investigating within the Strategy-As-Practice agenda. Here the authors build on well known methodological approaches but apply them in ways that take into account the role of social practice.

Finally, in the last part of the *Handbook*, examples of empirical research are presented, demonstrating that innovative approaches to researching within the philosophically and methodologically pluralistic Strategy-As-Practice field can and do (co)exist and that these examples should serve to further inform innovative approaches in the future.

The *Handbook* reads as a sprawling set of agendas that demonstrate that as a field, the Strategy-As-Practice research agenda seems yet to be united in a common direction. This may be, as Johnson et al. (2007) indicate, the product of a plurality of theoretical and philosophical approaches, but even when the reader gets to the end of it, they are likely to remain as confused about the field as when they began the book. Certainly, Clegg (2011) points out that: ‘For future researchers there is a multiplicity of direction available’ and that ‘Compared to other recent handbooks, such as that of institutional theory (Greenwood et al., 2008), this volume is far less a summation and steering of future research; instead, it scopes some preferred directions, alerts the researcher to issues that remain unresolved, and provides ample opportunity for critics of the perspective to marshal arguments about coherence.’ (p.1589)

Despite the increased sophistication that had been evidenced, at this stage of its development the field remains unsettled. This provided further opportunities for researchers to explore the boundaries of the Strategy-As-Practice field, both in terms of methodology and philosophical perspectives.
Whilst all this philosophical discussion was going on, Jarzabowski and Kaplan (2010) took a more direct route in surfacing another dimension of the Strategy-As-Practice research agenda. Although it has been widely recognised that Strategy-As-Practice is dominated by European research, this leaves larger questions as to why it is taking so long to be adopted by American counterparts. They suggest that there is a range of factors, including methodological challenges (especially gaining access to managers in for-profit businesses for an extended period of time and, due to the observational nature of data collection, in deciding what to emphasise and what to de-emphasise in the data-collection stages of the research).

Elsewhere, Johnson et al. (2010) examined the role of strategy workshops in the strategy-formation process. This research built upon the work of Hodgkinson et al. (2006) (to which it is closely aligned and shares a common author), who undertook some of the earliest work of tying to determine (from an academic perspective) ‘...basic details such as how often they occur, who gets involved, what end(s) they serve and what effects they achieve’ (p.480). Since this early work, there have been other studies which have tried to shed some academic light on what is a prevalent activity. MacIntosh, MacLean and Seidl (2008) looked at strategy workshops and their role in strategic change, whilst Bourque and Johnson (2008) used ritual theory to analyse strategy workshops to try and suggest reasons why such away days fail to convert intended strategies that are formed within the workshop into ‘...realized strategy when participants return to their everyday place of work’ (p.553).

2011 saw a continuation of the debate about what practice means, with Styhre (2011) advocating an individual perspective of practice as being the development from novice to expert and the appropriate use of discrete, rational, bounded forms of thinking with insights drawn from experience both personally enacted and that derived from operating within a community of practice. Feldman and Orlikowski (2011), on the other hand, look towards providing a more theoretical explanation of what practice is and how it the concept can help in organisation studies:
‘In focusing on the empirics of practice, we understand organizational phenomena as dynamic and accomplished in ongoing, everyday actions. In focusing on practice theory, we understand the mutually constitutive ways in which agency is shaped by but also produces, reinforces, and changes its structural conditions.’ (p.1250)

Other work that appeared during this time period includes the work by Fenton and Langley (2011) that, as mentioned earlier, picks up on language and discourse themes in Strategy-As-Practice environments as conceptualised by Vaara (2010) (discursive analysis), Samra-Fredericks (2003) (how language is used in strategic settings), and Spee and Jarzabowski (2011) (strategic plans as communicative devices). In terms of this thesis, this was the year that an important piece of work was published by Kaplan (2011) entitled Strategy and PowerPoint: An Inquiry into the Epistemic Culture and Machinery of Strategy Making. As will be discussed later, this study reports on the way in which PowerPoint is used as a piece of epistemic machinery to shape and constrain meaning-making in a strategy setting. Why this piece of work is important is that for the first time, work of this nature which has been focused on the social-materiality of objects (and metaphor) in strategy work has described the process of using these objects as part of a machinery of knowledge-making. Kaplan located the use of this epistemic machinery within a larger epistemic culture of strategy-making, and although this work builds on that of Knorr Cetina (1999) in particular, it is a fresh, new perspective on the micro-macro debate that had been raging in the Strategy-As-Practice literature.

Rounding out this tour of the Strategy-As-Practice literature, Cornut, Giroux and Langley (2012) continues on with the linguistic/discursive analysis of strategy practices which look at strategic plans from a genre perspective, and Kupers, Mantere and Statler (2012) tackles understanding strategy-making episodes from a storytelling perspective. Hacklin and Wallnöfer (2012) also have a perspective on the use of language and how ‘the business model’ can act as template to shape discussions about strategy. Kaplan (2011) would see this as another use of the epistemic machinery of strategy-making. Significantly, Jarzabkowski, Spee and Smets (2013) published work that examines the role of material artefacts and how they are involved (and part of/included) in the
activities of strategising. Where this research differs from the research of Kaplan is that here, multiple objects are identified as being constitutive of a strategy-making exercise, rather than as being enabling/constraining of a strategy-making episode. Jarzabkowski, Spee and Smets (2013) explain that the use of these materials can be abstracted out to five typologies/practices of ‘doing strategy with artefacts’ (p.41). This work indicates (if very weakly) that there is a growing interest in the way in which objects are incorporated into the strategy-making process. I feel that of all the various approaches to trying to link the micro-activities of managers to the macro-activities of institutions and social practices, this approach holds the most promise.

The Strategy-As-Practice field has been intimately concerned with the role of the manager in strategy-setting and the manager’s interaction with the organisation – as Jarzabkowski and Spee (2009) so comprehensively pointed out. If we are to return to Hoskisson et al.’s metaphorical swinging pendulum, most of the literature is concerned with an internal perspective, focusing on the actions of managers, and the research which the Strategy-As-Practice community seem predominantly to be undertaking supports my earlier statement that that the ‘practice turn’ in the research agenda almost completes the swing of the pendulum back to its original position, as articulated by the early strategy scholars of the 1960s.

As Jarzabkowski, Spee and Smets (2013) note, there has been a ‘dearth of research into material artifacts and how they are engaged in strategizing activities’ (p.41). My research is a timely addition to this under-theorised arena. Where the Jarzabkowski, Spee and Smets (2013) and the Kaplan (2011) work both focus on the epistemic objects (as do the work of Whittington et al. (2006), Heracleous and Jacobs (2008) and Sims & Doyle (1995) – even if they didn’t specifically recognise the objects as such), my work seeks to step back from the object and examine how a particular conceptual epistemic technology can be employed to help strategists undertake their strategic thinking practices. This epistemic technology is located within the world of cartography and maps/mapping with the typical elements of a map operating as the epistemic
machineries (epistemic objects in use). It is clearly linked to the wider, social practices of strategy-making, since the epistemic technology explicitly refers to the construction of knowledge within a situated practice of strategy-making, yet also calls for a critical understanding of how that (strategic) knowledge is constructed.

Just as there have been some calls to ‘de-centre’ the organisation from research into strategy-making, this focus on material objects helps to de-centre the humans from the process of strategy-making and helps focus attention instead on the social routines of meaning-making in strategy activities, potentially helping to forge a tighter link between the acts that humans perform with the epistemic objects and the wider social ‘practice-complexes’ that Chia and MacKay (2007, p.219) call for.

This thesis seeks to address some of the issues canvased by various authors in the literature. Firstly, it is concerned with the micro-practices of strategists and the way in which they go about their day-to-day praxis. Secondly, through employing the epistemic technology of map-making, it seeks to help strategy practitioners connect their micro-practices of strategy-making to organisational (meso-level) strategy. Thirdly, through encouraging a re-conceptualisation of how strategists can effectively undertake their praxis within a wider social/institutional framework, this thesis seeks to connect the individual practitioner with others through a shared understanding and language of that re-conceptualised practice, thus seeking to – however incrementally – change the way strategy is understood and practiced at the macro-level.

This provides a challenge for the strategic thinker: How is it that a manager can think at multiple ‘levels’ at the same time? In thinking through issues, is it as important as the Strategy-As-Practice researchers seem to indicate that the three levels of practitioner, praxis and practices be linked?

I believe it is.

How, then, to do it? This is the question that forms the focus of the next section of this thesis.
Cartography, maps and mapping

In the following section, I introduce some of the literature on cartography and mapping. I limit the scope of this literature in order to support the following statements:

1. Maps are an epistemological ordering of knowledge. They are a system.

2. Because maps are systemic, they can be adapted to suit multiple contexts.

3. Mapping is a useful way to think about the creation and dissemination of knowledge other than just spatio-temporal knowledge. As such, mapping can help form the basis of an epistemic technology of knowledge.

The literature on cartography is extensive and so I have deliberately restricted the selection of literature to highlight the aspect of mapping epistemologies, as this is the area of concern for this thesis.
An introduction to maps and mapping

‘Maps have long been seen as objective, neutral products of science. Cartography is the means by which the surface of the earth is represented as faithfully as possible. The skill of the cartographer is to capture and portray relevant features accurately. Cartography as an academic and scientific pursuit then largely consists of theorizing how best to represent spatial data (through new devices, e.g. choropleth maps, contour lines; through the use of colour; through ways that match how people think, e.g. drawing on cognitive science; and so on).’ (Kitchin & Dodge 2007, p.331)

This comment centres on maps as being the product of a positivist, rational approach to understanding the world – maps as ontologically located in the objective sphere, and the representations of which are epistemological artefacts of this belief. In this section, I examine the role of ‘critical’ cartography within this ontological realm and consider what critical cartography has to say about the role of maps in society. I then posit my own definition of a ‘map’ and explain how it might be used in a strategic management context.

What is a map?

Robinson (1952) holds the position that the role of mapping is to faithfully reproduce that which is on the surface of the earth onto a flat plane. For him, mapping is a scientific activity which subscribes to a positivist ontology and for a long time this was shared as the dominant, modern perspective in map production and cartography. In some circles, this view still prevails (for example, see Stehman (1999) on the scientific comparison of maps and Simley (2001) on the assessment of quality of maps). However this view has also been challenged and it is now accepted that a scientistic view is but one perspective. Perkins (2003) points out that the discussions between the scientistic perspective and the social perspective (especially those which are informed by critical social theory) are still very active. He believes that ‘…it makes more sense to understand contrasting approaches as representing different knowledge communities, telling very different stories’ (Perkins 2003, p.342). This viewpoint is also echoed by Kitchin, and Dodge (2007), who state that not
only are these different knowledge communities, but that the way in which they go about promoting their perspectives are also different, and lead to different outcomes:

ʻOn the one side have been other ‘scientific’ cartographers seeking to replace Robinson’s model with one more rooted in cognitive science (e.g. MacEachren, 1995) or visualisation principles (eg Antle and Klinkenberg, 1999); on the other have been critical cartographers who, drawing on critical social theory, have questioned the rationale and principles of cartography, but often have little say about the technical aspects of how to create a map or how maps work (Crampton, 2003).ʻ (p.332)

Even within the scientific field of cartography, there is still significant debate as to exactly what it means when one says that they ‘map’. (For examples of mapping as socially-constructed knowledge claims, see especially Wood and Fels (2008), Wood and Fels (1993), Harley (2001c), Harley (2001b), Monmonier (2005) and Crampton (2001)). Furthermore, the scientistic view of maps and mapping has come under attack, as reported by (Bradshaw & Williams 1999, p.250), here quoting Deleuze and Guattari (1987):

ʻThe map does not reproduce an unconscious closed in upon itself; it constructs the unconscious... The map is open and connectable in all of its dimensions; it is detachable, reversible, susceptible to constant modification. It can be torn, reversed, adapted to any kind of mounting, reworked by an individual, group, or social formation. It can be drawn on a wall, conceived of as a work of art, constructed as a political action or as a meditation... A map has multiple entryways, as opposed to the tracing, which always comes back ‘to the same’. The map has to do with performance...” (Deleuze and Guattari, 1987, 12).’

The map is therefore also regarded not as something that can be approached as a scientific truth, but as a contestable, alterable, reproducible entity that helps shape the social world – something very alien to the perspectives of Robinson (1952), Simley (2001) and Stehman (1999).

Cartography has a long and rich history (Monmonier 1996) and the scientistic view of the discipline is as just as historically-situated as any other perspective. In fact, ‘...all maps incorporate assumptions and conventions of the
society and the individuals who create them’ (Wood 1993, p.90). Denis Cosgrove (1999) begins his book, *Mappings*, by discussing how maps have been historically situated and are the product of specific epistemologies, and begins to locate the act of mapping as a broad discipline that is not restricted to the positivist, western tradition of representing the world on a two-dimensional space (what he refers to as naturalism), but as an act of representing elements that have a spatial relationship to them and wherein the focus is on the relationship, not the representation of some external geographic phenomena:

‘As a graphic register of correspondence between two spaces, whose explicit outcome is a space representation, mapping is a deceptively simple activity. To map is in one way or another to take the measure of a world, and more than merely take it, to figure the measure so taken in such a way that it may be communicated between people, places or times. The measure of mapping is not restricted to the mathematical; it may equally be spiritual, political or moral. By the same token, the mappings record is not confined to the archival; it includes the remembered, the imagined the contemplated.’ (Cosgrove 1999, pp.1-2)

By broadening the concept of mapping, Cosgrove includes a range of styles of diagrams that historically have their genesis in cartography but don’t necessarily resemble maps of the modern era – these include thematic maps, cosmographs and cognitive maps, as well as ‘…a circuit diagram, a tattooed torso or the topos of the heavenly Jerusalem could fall within their remote, the textual narrative of a journey or a purely abstract, non-referential image of line and colour would not’ (Cosgrove 1999, p.17).

Cosgrove points out that maps are an important communicative device and that their importance in a globalised world should not be understated. Indeed, he states that they have a central role in helping to create and disseminate knowledge about the economic, ideologic, political, cultural and increasingly technological world in which we live.

‘A widely acknowledged ‘spatial turn’ across the art and sciences corresponds to a post-structuralist agnosticism about both naturalistic and universal explanations and about single-voiced historical narratives, and to the concomitant recognition that position and context are centrally and inescapably implicated in all constructions of
knowledge. ‘Cognitive mapping’ means much more today than was conceived by its 1960s investigators, who took for granted the existence of an objective mappable and mapped space against which their ‘mental maps’ could be compared. Not only is mapping ‘cognitive’ in the broadest sense, inescapably bound within discursive frameworks that are historically and culturally specific, but all mapping involves a set of choices, omissions, uncertainties and intentions - authorship - at once critical to, yet obscured within, its final product, the map itself.’ (Cosgrove 1999, p.7)

Thus what is mapped is important and often mediated through the dominant paradigm of knowledge at the time the map is made. Kitchen (2007) agrees:

‘...Crampton details that examining cartography ontologically consists of questioning the project of cartography itself. Such a view leads Crampton, following Edney (1993), to argue for the development of a non-progressivist history of cartography; the development of a historical ontology that rather than being teleological (wherein a monolithic view of the history of cartographic practices is adopted that sees cartography on a single path leading to more and more complete, accurate and truthful maps) is contingent and relational (wherein mapping and truth is seen as contingent on the social, cultural and technical relations at particular times and places). Maps from this perspective are historical products operating within a certain horizon of possibilities (Crampton, 2003: 51). It thus follows that maps created in the present are products of the here-and-now, no better than maps of previous generations, simply different to them. Defining a map then is dependent on where and when the map was created, and where and when it was engaged with, as what a map is and the work that it does in the world has changed over time (see also Livingstone, 1992: 2005). For Crampton (2003) this means that a politics of mapping should move beyond a critique of existing maps to consist of a more sweeping project of examining and breaking through the boundaries on how maps are, and our projects and practices with them (p.51): it is about exploring the being of maps; how maps are conceptually framed in order to make sense of the world.’ (Kitchin & Dodge 2007, p 335)

The technical aspects of mapping that are chosen also have an impact on the way in which information is presented and therefore communicated:

‘As an attempt to secure and convey spatial knowledge graphically, mapping may be regarded as a distinct epistemology, but one whose specific practices are historically and culturally variable. Among the consistent or a priori features of mapping are scale, framing, selection and coding. James Corner...reminds us of the number of commentators who have used the idea of a map at the same scale as the territory it represents as the launch pad for speculation on
questions of representation and reality. Enlarging or reducing the space generated and occupied by phenomena alters their form, their significance, their relationship with meaning with other phenomena. Scale selection and manipulation is thus a powerful imaginative and generative act which at once records and sets in train chains of meaning and association in an active process of knowing.’ (Cosgrove 1999, p.9)

These various elements of a map are akin to what Knorr Cetina (1999) would call epistemic machineries. These are combined and employed in various ways to form an epistemic technology of mapping – a system of mapping – through which an epistemic knowledge culture is made and re-made. Wood (1993, p.89) reminds us that ‘The objectivity of modern maps of the world is so taken for granted that they serve as powerful metaphors for other science, on occasion even for scientific objectivity itself,’ and that it is ‘(T)he canonical history of Western cartography (that) reinforces that assumption of objectivity.’ Because Western maps are assumed to be objective and accurate, this reinforces their claim of authority and truth, which in turn leads to a desire for ever more ‘accurate’ maps.

In this way, maps literally shape the world.
Maps as a system of knowledge

If we accept that maps can be viewed as a system of knowledge and that they represent an epistemic technology of knowledge making, then it should hold that the technology should be applicable in various contexts and still fulfil the requirements of knowledge generation.

The literature is extensive in this area within a Euro-centric/Western perspective of maps, but what about other contexts? Do the epistemic machineries of mapping also extend into other cultures and into other ways of knowing?

It is difficult for a Westerner to think of maps in anything other than through a western paradigm of mapping. Only people with a deep, abiding interest in maps of antiquity, or maps from other cultures, would understand that the scientific conventions of cartography are nothing more than a paradigm and represent only one way of producing maps. Understanding that this paradigm for map-making conventions is no more than a preference allows us to expand our conceptualisations of maps and explore other methods of mapping to see if they will more readily explain what we want.

The ways in which the cartographic ‘sciences’ have developed and the standardisation of map-making processes and conventions (and their interpretation thereof) mean that mapping takes on a rational, objective perspective (Crampton 2001), and in doing so it subjugates other interpretations of place and meaning. Without a critical understanding of this process of codification, opportunities to explore other ways of knowing are reduced. This has implications for all map-makers and map-readers. If a map author takes a particular stance and thus draws his (or her) map with a certain interpretation in mind, the dominant epistemic culture will shape both the drawing and the interpretation of the map. This invisible influence can stand in opposition to new ways of thinking and knowing.

My argument is that these are the fundamental epistemic machineries of mapping that help shape the knowledge claims of maps. Bringing a modern
perspective to ancient maps, Cosgrove (1999) explains how other knowledge systems can still be explained through the epistemic machineries of maps:

‘Framing is as fundamental as scale...in mapping, as in picturing, the frame can connect to quite distinct epistemologies in fulfilling its fundamental topological functions, not only of separating inside from outside, but also of producing and organizing unity and totality within the space so contained. As Jacob claims in the context of ancient Hellenistic map-makers: ‘one of the underling dynamics of the Alexandrian culture is its attractive and magnetic power: collecting all the books ever written by the Greek world as well as the barbarians’. Framing is a territorializing, even imperializing, process, the map inescapably a classificatory device. Thus, as Alessandro Scafi points out, mapping a place such as Paradise which acts as both a boundary and a centre creates almost insoluble epistemological contradictions. And self-conscious acts of frame-breaking, such as seen on the Ptolemaic world map printed in Ulm in 1482 where Scandinavia and Thule extend beyond the northernmost latitude of the framed oecumene, are uncanny, signalling epistemological as much as aesthetic anxiety. Failure fully to frame a land mass, or of mapped territory fully to occupy the map’s bounding lines, as in seventeenth-century maps of Van Diemen’s Land, speak of failures of vision and knowledge of the uncertainty implied in the peripateia – the meandering linear progress whose trace may disappear into trackless space. “Blank” spaces within the frame also generate and reflect aesthetic and epistemological anxiety; they are thus the favoured space of cartouches, scales, keys and other technical, textual or decorative devices which thereby become active elements within the mapping process.’ (Cosgrove 1999, p.10)

It is important to recognise the impact of the various elements on the creation of a map. The way that these elements interact shape what can be (or is/is not) included within a particular map. Silences can be regarded as either a lack of knowledge, or a deliberate act of non-selection and in the most extreme cases (e.g. propaganda maps) they can be regarded as suppression. This is just one more way that maps shape and reinforce our understanding of the world and mapping.
Evidence of ‘alternative’ claims to knowledge (place) and mapping

‘Native maps’ may offer a way to critically analyse the dominant paradigm of scientific cartographic conventions. By looking towards maps that have been made with ‘alternative’ conventions, we can highlight ‘other’ perspectives and as such not be trapped by the dominant paradigm. In this way, as Wood (1993, p.90) states, we can become “…aware of the subjective omissions and distortions inherent in maps…” and therefore once aware, we can begin to “…make intelligent sense of the information they contain”.

Native maps, in contrast to post-enlightenment cartographic conventions, seek to convey to the map reader more than just the physical (Euclidean) logic of what it means to locate something in space. Native maps also seek to give some sense of the cultural (or other) importance that a place represents. Since these maps don’t subscribe to the European cartographic conventions, the individual semiotics of each map can be constructed in such a way as to emphasise the specific purpose of that map. Nevertheless, there are some ‘standard’ conventions that seem to hold true in native maps. And native maps, too, have their own set of epistemic machineries:

‘Native maps from different nations share some constant characteristics. Among these characteristics, most common are “round lakes, rivers drawn as straight or curved (not wavy) lines, slashes across the river lines to indicate portages, dots to show campsites and hunting areas, commemorative signs for raids and battles” (Belyea 141). These geographical indicators attest to the significance of both context and history in Native maps; rather than representing the earth to a standard scale—the goal of nearly all European mapmaking—Indigenous North American mapmakers focused on the cultural significance of the topographical features. A lake with cultural significance, for example, may be rendered larger than other bodies of water on the map in order to emphasize its importance; a creek that plays no part in the reason for the creation of a map may be omitted completely. One of the most common features in Native-made and Native-informed maps is the relatively straight alignment of natural features. This “straight-line mapping” (Fossett 113) or “linear coherence” (Belyea 141) characterizes both Inuit and sub-arctic North American Native mapmaking and suggests the degree to which relationships among geographical features and locations supersede mere representations of their existence on the ground. A full understanding of Native maps relies not on a European
understanding of scientific geography but of the context—and the narrative—that accompanied each Native-made map.' (Johnson, K 2008, p.107)

This ‘alternative’ approach reading of native maps is echoed in the work of Devlin-Glass (2005), where she talks about the importance of place names in indigenous Australian maps. In this particular instance, she mentions the fact that due to post colonial settlement and the restrictions on aboriginal traveling of country that it brought, the areas that were named in her atlas served dual purposes: a) to ‘locate’ a place and b) to act “as an aide-memoire” (p.130) of the cultural understanding of that country. The use of the place name, though, is most important in a cultural sense, for as she explains, in Aboriginal culture ‘…a name is more than a name. A name brings forward a whole sensual experience; it’s about spirituality, history, and humanness’ (p.130). A strictly western geo-centric reading of the Aboriginal Atlas would miss the cultural aspects of the maps, which, for the authors, are the most important aspects of the maps. This use of a name is therefore deeply symbolic. Later in this thesis, I explain how symbols act as one of the epistemic machineries of maps – here we can see correspondence between the epistemic technologies of native maps and of modern, western maps.

The Devlin-Glass quote points to the way in which maps are interpreted and to the fact that in some cultures it is of lesser importance to be ‘scientifically accurate’ as to represent such things as relationships between elements (of a map). Blade’s (1991) insistence that there needs to be correspondence between the map and that which it represents (in this piece he is talking about temporal space) can be loosened a little bit, especially if we say that there doesn’t need to be direct correspondence, but a ‘good enough’ correspondence to enable the map-reader and author to understand the relationships between the elements (and how these relationships are real-ised).

The reading of maps is also culturally directed, and this can have an impact on the way in which the maps are understood. For example, the difference between the narratives that reside in indigenous maps and the narratives of European maps is that when placed in an atlas, the reader understands that the
European Atlas has maps that are connected to each other – that the narrative is somewhat linear. In native maps, however, the narrative is not linear at all. Stories overlap, begin and end in different places, are deliberately censored due to cultural restrictions on who can possess certain knowledge and who can pass this knowledge on. For western readers of western maps, it is unlikely that the act of reading an atlas is a conscious one, that the interpretations of the maps and the way in which they are connected is not consciously noted by the reader, even though they rely on them to generate understanding of the maps (and atlas). Thus, the co-creation of the map between the map-maker and the map-reader turns out to be an important aspect in the creation and use of maps as an aide to communicating and sharing knowledge.

When discussing the Yanyuwa atlas and the maps it contains, Devlin-Glass (2005) highlights the fact that it's not just the maps themselves that provide the meaning, but the interaction between the maps and the 'artefacts' that surround them. In this case, she specifically relates to the songs sung by the Aboriginal Elders. Wood and Fels (2008) would call these external elements perimaps, external representations that help explain what is contained in the map.

‘Although the cartoon maps and the cross-section kujika are the most innovative and pedagogically powerful features of this work, the print sections are intimately related to them. The images, like the land in a ritual situation, acquire meaning by being animated by the songs.’ (Devlin-Glass 2005, p.145)

Here, Devlin-Glass is making explicit the relationship between that which is contained in the map and recognised through a European system of understanding, and that which is semi-permanent in form, but vitally important in context. Ultimately, she is trying to show that the map is not required to show everything; just the central narrative. This leaves spaces in the margins for conversations and clarifications. This is where the gaps are filled in and meaning is made. This, necessarily, is a shared process.

One of the difficulties in drawing a map is the fact that the author and the reader need to speak the same language. In our Euro-centric culture where mapping is seen to be a rational, objective practice, the omission of something
can be seen as a necessity of, say, scale, sloppy craftsmanship or a deliberate omission for some unstated reason. However, in Native American maps, something may be omitted because it has no place in the description of the relationships depicted in the map – even though there may be plenty of (white) space in which to position it. Drawing too much would confuse the meaning of the map.

It should be stated clearly here, too, that native maps share a common characteristic with Euro-centric maps in that they both reinforce the selective use and re-presentation of knowledge in order to achieve desired ends – whether it be to accurately locate a place in Euclidean Space, or to highlight some cultural importance – and as such, maps continue to be sources of power. When Blaut et al. (2003) state that maps seem to be a ‘cultural and cognitive universal’, it seems that the use of maps can also be added to this statement. While it may be that the maps are drawn with the best of intentions and that they may not be overtly used to further entrench power relations, it seems difficult to see how maps and mapping can escape this criticism.

"Unlike the work of many scholars working in the field of Native literary studies, the privileging of so-called universal, European scientific knowledge has shaped the study of the history of Native cartography. In that field, non-Native scholars have tended to analyze Native-made and Native-informed maps within European scientific frameworks, focusing almost entirely on “translating” Indigenous cartographic information; that is, they look for ground referents, correspondences between the features on Native-made maps and those on modern Euroamerican maps of the same geographical area.(7) This framework is an exercise in translation, which, as Clifford Geertz envisions it, should work not as “a simple recasting of others’ ways of putting things in terms of our own ways of putting them [. . .] but [by] displaying the logic of their ways of putting them in the locutions of ours” (10). This kind of effort to translate one system of representation into another has been fraught with value-laden judgments that fault Indigenous mapmaking, as when G. Malcolm Lewis, one of the most respected scholars of Indigenous cartography, notes the “failure” of Indigenous mapmakers “to conserve distances or direction, or shape” in their representation of their landscapes (17). In reading Native maps, argues Barbara Belyea, “we must resist the temptation to translate their signs into ours, and accept that these maps constitute a complete and valid cartographic convention without recourse to ‘accuracy’ or explanations in scientific terms. Native maps are not crude attempts to render geometric space” (141–42).
Native proponents of literary nationalism have also questioned whether this kind of cultural “translation” is possible or even necessary at all. Such a framework ignores not only some Indigenous nations’ understanding of the social and historical nature of space but also a tribally centered understanding of social and historical representation of space.’ (Johnson 2008, p.108)

An important aspect to acknowledge here is that maps are authored within a specific social and cultural context. Authors and readers of maps that exist within the same cultural context are likely to understand how a map should work; they will understand the epistemic machineries of maps. This may mean that maps can be interpreted from an objective ontology through the epistemic machineries of a positivist epistemology, or that they might be understood through a much more subjectivist ontological position. Whichever perspective is taken (and all variants between), this means that maps are systematic in the way in which they construct and communicate knowledge. They can therefore be said to be systematic in the way in which they work.
A (working) definition of a map

One of the challenges with refining the literature on mapping is that a large proportion of the literature is located under the category of ‘geography’. Although there are extant writings on maps in other fields (e.g. cognitive psychology cf. Eden & Ackerman (2004), Kitchin (1994), Hodgkinson & Clarke (2007)), most definitions, in one form or another, tend to explain maps as devices for representing (usually) geographic space. However, in this research I am more concerned with a more abstracted concept of ‘space’, which I’ve tentatively named ‘idea-space’.

Briefly, idea-space builds on the broad definition of space as adopted by Hernes (2004), wherein space is described by the boundaries that it exhibits. Thus an idea can occupy a (mental) space as much as it can occupy a physical one.

Idea-space hasn’t been adequately defined in the literature. Examples of the use of the term range from the field of growth economics (Olsson 2000), to computer programming (Lyons, Simmons & Apperley 1993), to an abstract space for leaders to encourage ‘out of the box thinking’ using scenario-planning techniques (Mason, D 2003, p.26). Idea-space is a key concept for this research as it is a term that aims to link the idea of thinking (ideas) with the concept of space (which can be mapped and therefore understood through a mapping epistemology). I use the term ‘idea-space’ to represent a kind of mental territory and utilise the metaphor of a map to help bridge the boundary between the mental processes of managers and the outcomes of their thinking.

Blaut et al. (2003) describe maps as having:

‘...two basic syntactic (or positional) properties: it depicts a landscape from an overhead perspective, a perspective that is rotated roughly ninety degrees from the horizontal viewpoint of ordinary perception, the viewpoint that J. J. Gibson (1979, 283) called the "natural perspective"; and it is a small-scale model of the landscape. A map also has the semantic property that it depicts the landscape with some degree of abstraction: it uses signs that may be relatively iconic (pictorial), relatively abstract (in the sense of reduced or distorted
This description of maps captures what is commonly thought of as the dual roles of maps and mapping: those of recording and reproduction of some phenomena by another, and of communicating information.

Further still, the act of understanding maps needs to be made distinct from the maps that are produced. To this end, Harley (2001b, p.153) defines cartography ‘...as a body of theoretical and practical knowledge that map makers employ to construct maps as a distinct mode of visual representation.’ Here, Harley is widening the definition of what it means to draw a map from the traditional map-making that we think of (with a positivist, Western perspective) to something broader, an act of representing anything in a visual form. Cartography is therefore a definition that is applied to the finished product – the map – rather than the process of conceptualising a map and using a mapping epistemology as a knowledge framework. The understanding of maps is separate from the production of maps. This echoes the position of the Strategy-As-Practice scholars in that they argue that strategy is something that managers do, rather than something that an organisation has (e.g. a strategic plan) (Whittington et al. 2006).

The fact that a map is a communication device cannot be ignored. Although due to the efforts of critical cartographers, particularly in the last decade or two (e.g. (Harley & Woodward 1987; Laxton 2001; Pickles 1995; Wood 1993; Wood & Fels 1993, 2008; Wood, Kaiser & Abramms 2006)), this view may not be seen as their primary purpose – it is an aspect of their production and therefore use. Maps can be used to convey a wide variety of information, but as outlined above, always within a specific epistemology. It is the definition of the space that is as important, if not more so, than the representation of the space in a map.

My own working definition of a mapping may be described as: ‘A representation of some phenomena of interest with regard to epistemic
machineries of map construction’. Representation does not, in this sense, have to refer to the physical production of a map. It may refer, for example, to a conversation between colleagues. Equally, space can be defined not only in terms of Euclidean space, but can include any concept that can have an identifiable boundary around it (as suggested by Hernes (2004)). Therefore, such things as organisational culture (e.g. the culture at Apple), mental constructs (a positivist perspective) and experience can all be represented spatially, since each of these concepts has an identifiable boundary. Later in this thesis, I refer to this boundary as the epistemic element of ‘frame’.

There are many ways in which a map can be created; maps don’t have to be two-dimensional, flatland representations drawn on paper. Maps can be performative (as in some indigenous cultures), rendered in three-dimensions on a computer screen (as in some consumer GPS units), scrawled on the wall of a cave in paint, or indeed assembled from various three-dimensional objects (as in the case of cognitive sculpting (Sims & Doyle 1995) or embodied metaphors (Heracleous & Jacobs 2008)).

The specific ability of the map-maker to represent his or her idea of the spatial relationship will depend on a number of factors, not the least of which include the map-maker’s previous understanding of what a map is supposed to look like, what objects are at hand to construct the map and the nature of the spatial relationships to represented. I contend, though, that they conform to the cultural universality (Stea, Blaut & Stephens 1996) of maps and that as they are constructed within a particular cultural context (or what Chia and MacKay (2007) would refer to as a social complex). If they are to be understood by others, map-makers and map-users will need to subscribe to a shared epistemology of mapping technologies.
Using an epistemic technology of mapping to (re)present phenomena

Understanding the way in which we interpret maps is important if we think of maps as being information delivering devices. (Note that in my thesis I’m not saying that – I’m saying that the maps are important in constructing new knowledge, not just transmitting knowledge from one person to another). In the past, maps have been regarded as devices that help the map-viewer to understand that which the cartographer wishes to depict. It was the cartographer’s job to do all that was in her power to most effectively communicate the phenomena under consideration – usually the geographic environment.

MacEachren (1995) states that there really weren’t any models of cartographic communication developed until the late 1960s. This is important because before this time, it was assumed that the sole purpose of maps was to disseminate knowledge, not help a map-reader to make new knowledge. It seems that for a very long time, it was implicitly agreed that maps were largely devices of reporting knowledge rather than constructing knowledge. The role of cartographer, then, was one of faithful reproduction of what he saw, not one of design in which he helped someone to understand a particular thing or, as I discuss later, an abstract concept.

MacEachren (1995) provides a brief but useful introduction into the history of the modern (20th century) cartography and some of the major influences on the discipline. Over the course of the second half of the twentieth century, more effort was contributed to the task of designing maps as a means of helping map-readers to understand a phenomenon or to solve a particular. Development of the understanding of the way in which the eye-brain complex works (biological/neurophysiological), as well as our perception of the visual stimuli (cognition/psychology) have helped us to understand that when it comes to reading maps, there are a few important aspects that we pay attention to, and that these aspects have an impact on our understanding of the ‘meaning’ of the map.
As David Marr (1995, p.110-111), a noted vision scientist, has asserted, to understand any complex system we must "contemplate different kinds of explanation at different levels of description that are linked, at least in principle, into a cohesive whole, even if linking the levels in complete detail is impractical." (MacEachren 1995, p.12)

What I think he is trying to say here is that any map can be understood on multiple levels. We can look at a map and look at the individual symbols, squiggles, lines and other minute detail to understand it at a very basic level, then we can zoom out to understand the map, taking into account the way in which the symbols are grouped/positioned on the map in order to create some form of hierarchy of meaning about the symbols, and finally we can look at the 'whole' map to understand how various groupings are related to one another in such a manner as to give us an understanding of the map in its entirety. Maps also must be considered as artefacts that exist at a particular point in time and it must be recognised that at the macro level, they are informed by larger, cultural forces. Their meaning will thus be interpreted through the cultural lenses that exist for both map-producer and map-reader.

Harley (2001b) points out that if you deconstruct a map (in the postmodern sense), then there is at least another level of meaning that needs to be considered, namely: What are the historical and cultural assumptions behind the map-maker's squiggles? Maps are made within a social and cultural framework and it is this invisible framework that guides the map-maker in her depictions. The Europeans adopted the Euclidean coordinate system and then promoted their Euro-centric view of the world by placing Europe at the centre of most maps. Indeed, when we look at a 'modern' map that is centred elsewhere (other than Europe), we are often confronted by a strange feeling that the map is somehow flawed, not quite right. If the novice map-maker wishes truly to think about the way in which he is constructing his map, he will need to have regard to these issues as well. For example, if the strategist is employed (or owns) a for-profit business, how influenced by the concept of money and profit is he? Will the historical moment in which he lives have an impact upon the kinds of things that he will choose to represent in his map? I suspect so.
It is important for the map-maker to understand that they need to be able to think about the map as having multiple meanings, depending on the audience and also the subjective interpretation of the map-reader. The processes that the map-maker uses in thinking about the way data is displayed will be critical. The map-maker needs to think not only about the detail, but also about the way in which the way the detail is represented in order to drive meaning, and then, of course, the whole thing has to be appropriately culturally located. This probably means that the map-maker will need an ability to be able to quickly ‘zoom’ from one level of abstraction to another in order to ensure that the map that they are making retains its meaning on all levels at once. Of course, focusing on one level of meaning at a time is also a valid alternative. In the Discussion chapter, I explain how this is possible through the mediating epistemic element of ‘scale’.

Nevertheless, when one seeks to map knowledge claims (even of the geospatial kind), it must be remembered that the representation of any map (other than the truly fanciful and imaginative ones – and even those require some form of idea) is partly ‘…a matter of available data’ (Buckley 2004, p.246) and that the ‘…range of phenomena that can be represented on a map and the accuracy of the presentation are dependent upon the prevailing technology available to mapmakers’ (Buckley 2004, p.247).

In this understanding of mapping it is not just the spatial aspects of geography that get mapped; time is also a key factor. Indeed, both dimensions of time and space are represented in any map. Ultimately, maps are created at a certain time and represent a description of the mapped object at a specific time (and not always at the same time as the map was drawn). The fact that both time and space are represented is important for managers to recognise when creating their own maps. Strategic thinking is an act that occurs both at a time and also is about time – strategic thinking is future thinking and as such, any mapping of the future will need to incorporate the concept of time.

Thus the manager is faced with choosing what to include in her map and these decisions do not come without consequences. Leaving elements out of a map or excluded them from the frame (it might exist, just not in this map) can
often mean that not only is an aspect excluded, but it is also ignored. For a map to be useful, it needs to engage with all the space within the frame, even if the frame cannot adequately hold all aspects that need to be mapped. This is not just an act of choosing a suitable scale – a small-scale map loses definition and may not adequately represent important aspects of the manager’s thinking. Moving in the other direction to a larger scale depiction is equally inconvenient.

One solution to this is to return to the idea of maps being a cosmological device, a way of representing complex epistemologies about the ‘world’. The medieval Mappae Mundi provide extant exemplars of combining both space and time relationships within a specific frame:

‘The mappaemundi, it has been well established, was essentially a cartographic encyclopaedia. Its function was to provide a visual synthesis of contemporary knowledge. The makers of mappaemundi used texts and images to frame and display Christian history and belief in a geographical setting…The space represented by these maps…was not intended to be co-synchronous but was used to show several events separated by time in the same way as a medieval narrative painting.’ (Scalfi 1999, p.63)

Managers may be able to choose this form of representation as a means of depicting complex relationships across both space and potentially discontinuous time. However, in doing so they will have to be explicit as to how they represent the element of time (what I later call the element ‘date’). The advantage of this approach is that it gives permission for the mapper to be creative in his or her depiction of the phenomena that they wish to represent.

The reading of management maps and of idea-space will probably mean that any classically trained (read: ‘western’) manager will need to suspend his/her idea of what a map is and how a map should work, in order to be able to understand the new kind of map and what it has to say. This will include the notion that each map will be unique to the context in which the organisation finds itself, and just as native map makers had their own unique ‘understanding of the social and historical nature of space…also a tribally centred understanding of social and historical representation of space’ (Johnson, K 2008, p.108) organisations and strategic thinkers will have to address these
issues in their own approaches to the epistemic technology of mapping and strategic thinking.
Identifying the elements of the map

In the following pages, I explain what the elements of a map are and give a description of their purpose.

These elements were selected after an exhaustive search of the literature. Whilst it is beyond the scope of this work to list all the elements of a map (as each map is different), the following eleven elements are regarded as being the most significant, since they explain not only what a map has, but also how it works.

It is important to recognise that most of the literature I examined had a distinctly ‘western’ heritage. That is not to say that I didn’t read more widely than this, but that this is the largest body of work existing for these kinds of maps. A significant amount of literature is devoted to the development of maps and mapping in the western world and is readily available. In order to contextualise this literature, though, I also examined the literature on such things as pictorial maps, propaganda maps and maps drawn by indigenous peoples across the globe. These literatures stand as a fascinating counterpoint to the predominantly western, scientific literatures that dominate the field.

Thus, a choice had to be made about which literature I paid the closest attention to during the research and which I would rely upon the most heavily. In making this decision, I had regard to two main factors.

The first factor that had an influence was convenience.

At the early stages of undertaking this thesis, when I was casting a very wide net in terms of the literature, I was reading all that I could about maps. I thought it sensible to begin by reading introductory texts on cartography e.g. (Dent 1999; Kaiser & Wood 2001; Krygier & Wood 2005; MacEachren 1995; Robinson 1952; Robinson et al. 1995), yet these texts rarely strayed away from the culturally-located, western hemisphere of mapping and rested heavily on the science of mapping. This kind of literature confirmed my own world view of maps – I knew what a map was; I had been taught it in school – and for a long
time I sought out literature of this kind, believing, falsely, that this was the only kind of literature that mattered. I was looking for that which I knew was there.

The second factor that influenced my choice included the backgrounds of each of the participants. In the first round of interviews, we spent considerable time exploring the background of each of the participants, including their family background, where they grew up (their locations), their early educational experiences and any post-secondary education that they had received. I also asked them to give me an indication of any experience that they’d had with maps.

The following elements of maps are by no means an exhaustive list. They are, however, the elements that exist in the extant cartography literature and that are also recognised as being present in the data that was co-generated with the research participants. I say ‘recognised’ here deliberately. This research has been a process of investigation and inquiry – it has evolved in unpredictable ways and now that I have the benefit of some hindsight, I am reluctant to suggest that this research has discovered anything new; rather, it has uncovered what was already there, reconceptualising cartography as a mechanism to help guide Strategy-As-Practice practitioners.

What follows is a list and subsequent discussion of the eleven elements of maps as part of an integrated chapter of Findings and Discussion. In my reading of the literature, I was able to identify up to sixteen mapping elements that may have proved to be useful, but when introduced to co-generation stages of the research, the research participants were unable to easily recognise these elements in their own strategic thinking praxis. This is not to say that without further investigation, these other elements could not be explored more fully and potential links co-discovered, but the data gathered within this research is not significant enough to draw this conclusion.

Upon reflection, it may be that the eleven elements discussed here are the ones that are most easily recognised (i.e. are the most familiar to the participants, or are the most easily grasped at a conceptual level), and therefore
it was easier for the participants to draw connections between their own work and the epistemic elements of maps.

There are five other elements of maps that were identified in the literature and that explored in the co-generation phase of the research. These elements had their basis in Gestalt psychology and were technically difficult to master. MacEachren (1995) dedicates some time to explaining these concepts and even though the participants and I explored them in the data co-generation phases, it may be that without a significant immersion into the relevant theory it is impossible for practitioners to recognise these elements in their own praxis. I do believe, however, that these other elements may provide a rich area for further research, but that an appropriate research design incorporating a significant, initial learning phase will be required. Here the Learning by Design (Kalantzis, Cope & The Learning By Design Project Group 2005) framework may again prove to be valuable.

In the Findings section of this thesis, I outline the various epistemic machineries (the mapping elements) that can be combined to form an epistemic technology of mapping and which can also be used as a mechanism for strategists to understand their strategic thinking practices. Below, I provide a brief description of these elements:

<table>
<thead>
<tr>
<th>Element</th>
<th>How The Element May Be Employed In Understanding Maps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>To alert the map-reader to what the map is about.</td>
</tr>
<tr>
<td>Frame</td>
<td>The border of the map (the edge).</td>
</tr>
<tr>
<td>Date</td>
<td>To alert the reader of when the map was produced.</td>
</tr>
<tr>
<td>Symbols</td>
<td>By describing and differentiating features and places, map symbols serve as graphic code for sorting and retrieving data in a two-dimensional geographic framework.</td>
</tr>
<tr>
<td>Selection</td>
<td>Selection is a positive term that implies the suppression, or non-selection, of most features. Ideally, the map author approaches selection with goals to be satisfied by a well-chosen subset of all possible features that might be mapped and by map symbols chosen to distinguish unlike features and provide a sense of graphic hierarchy.</td>
</tr>
<tr>
<td>Scale</td>
<td>Most maps are smaller than the reality they represent and map scales tell us how much smaller.</td>
</tr>
<tr>
<td>Projections</td>
<td>Map projections, which transform the curved, three-dimensional plane, can greatly distort map scale.</td>
</tr>
<tr>
<td>Simplification</td>
<td>Reduces the detail (especially if excess data was captured).</td>
</tr>
<tr>
<td>Displacement</td>
<td>…avoids graphic interference by shifting apart features that otherwise would overlap or coalesce.</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Smoothing</td>
<td>Diminishes detail and angularity, and might displace some points and add others to the list.</td>
</tr>
<tr>
<td>Enhancement</td>
<td>Adds detail to give map symbols a more realistic appearance.</td>
</tr>
</tbody>
</table>
The case for maps

Maps are a Cultural Universal, and the ability to make maps or map-like products develops early in childhood (Blaut et al. 2003). It doesn’t seem to be a skill or knowledge restricted to people from the western hemisphere (Stea, Blaut & Stephens 1996). Empirical research has shown that even very young children are able to read and interact with maps without any prior instruction in their use. The evidence seems to indicate that the ability to use and understand maps ‘is somehow very fundamental in human development’ (Stea, Blaut & Stephens 1996, p.438).

Indeed, in the study by Blaut et al. (2003), an hypothesis is proposed that ‘preschool children in a number of cultures can, without training, read some kinds of map-like models and simulate map use. It seems likely that children everywhere, perhaps by their fourth birthday, can deal with map-like models’ (p.177).

The research indicates that with mapping (at least in the spatio-temporal aspect):

‘It seems very possible that maps are indeed made by adults across the entire range of contemporary cultures. As to the historical or phylogenetic dimension, enough evidence exists from enough places to confirm in principle the hypothesis that humanity was making maps prior to the invention of writing and prior even to the Agricultural Revolution, with some evidence also suggesting origins in the Upper Paleolithic. It is not inconceivable that mapping, art, and grammatically complex language all emerged in the same epoch.’ (Stea, Blaut & Stephens 1996, pp.352-53)

So it seems that we have always mapped that which is important to us and are able to understand the maps of others and how they form a part of our cultures.

If this is true, then it is reasonable to assume that contemporary adults (managers, even) have at least a basic understanding of maps and how to use them. Even if the participants in this study have not considered the possibility of thinking about their practice in terms of mapping, it is reasonable to assume that
with some appropriate scaffolding, they can quickly learn how to think about their praxis in terms of maps, utilising the same syntactic properties as spatio-temporal maps. Furthermore, there is a long history of maps being used to aid decision-making, particularly of the kind that involve strategy (for example see Barber (1992)), which makes this research relevant.

The cultural universality of mapping and the ability to intuitively grasp map-making and map-reading skills are important aspects in my choice of this area of research and how it overlaps with the praxis of managers. If a skill is inherently understandable, this potentially lowers the barrier to adoption of that skill. Thus, with a little bit of instruction and practice, managers may become ‘quite good’ at being able to create and use maps to help them with their strategic thinking, decision-making and communications.

As explained in more detail in my Methodology chapter, I have relied on this cultural universality to provide a common base from which to undertake this research. Starting with the assumption that managers will have some understanding of mapping, this research then focuses on determining whether this knowledge can be used to further the ability of those managers to make better strategic decisions by helping to uncover their strategic thinking processes. My methodology is based on four main pillars of inquiry, each of which is grounded in a philosophy of co-learning (Wagner 1997) where the researcher and the research participants work together to explore phenomena:

1. To determine the experience that the managers already have with maps

   This is where the specific experience of the managers is explored. Do they use maps? Have they used maps in their managerial practice? What do they understand when the topic of maps is brought up?

2. To conceptualise maps and map use

   This is where we get to the specifics of maps, map-making, map-reading and really explore the parts of a map. This introduction to the main concepts
of the maps is to help extend the managers’ understanding of how maps are put together and to help them to recognise the main parts of a map.

3. To develop a critical appreciation of maps

Here, the managers are asked to critically evaluate maps and their own understanding of them. How do maps work? What makes them tick? Do maps support one agenda over others? Who wins and who loses when people use maps? How so?

4. To explore the creative use of maps

Once the managers have explored the various aspects of maps and mapping, together we explore how they might use them in their practice to further their strategic thinking, decision-making and communications.

The four pillars of inquiry are based on the work of Kalantzis, Cope and The Learning By Design Project Group (2005) with particular reference to the knowledge processes as outlined in their Learning By Design Framework (pp.73-74).

I explain and develop this model further in my Methodology chapter and in the Findings chapter, I outline the epistemic machineries of maps, which I refer to as ‘mapping elements’.
Chapter summary

In this chapter, I have explored the literature from the fields of strategy, Strategy-As-Practice and cartography. It was shown that the field of business strategy began to develop in the 1960s and has undergone significant swings in terms of research focus and development. I began by summarising the developments in the field and adopted the swinging pendulum metaphor of Hoskisson et al. (1999) to describe a shift of interest by researchers from a primarily internal perspective of strategy-making to an external perspective and finally demonstrated that with the development of the Strategy-As-Practice field, focus is returning to the internal perspective.

In the subsequent section on Strategy-As-Practice, I provided a comprehensive overview of the literature and highlighted the main concerns of this developing field. I particularly focused on the (generally welcomed) pluralistic approaches to research within this field and indicated some of the criticisms that exist of the field, paying particular attention to arguments about both the theoretical and methodological shortcomings that exist.

I also examined the relevant literature from the field of cartography, focusing primarily on the role of maps as knowledge devices that represent a unique epistemology. Charting the development of this literature, I highlighted the more recent role that critical cartography has played in helping people to make sense of their world.

I used the literature to develop an argument that the unique epistemology of cartography can be explained as an epistemic technology of mapping elements – a way of understanding how maps help create knowledge. I then began to draw together the argument that this epistemic technology of maps can help strategy practitioners to understand their own praxis and how this might be connected to both the meso-level practices of strategy-making at the organisation level and the macro-level institutional practices that help guide and shape strategy-making more broadly.
Finally, I conclude how maps might be a useful way for strategy practitioners to conceptualise and undertake their strategy-making activities and how this combination of disciplines can help answer the research questions:

1. Can cartographic conventions be used to help managers undertake strategy, and if so, how?

2. Can cartographic conventions help us to understand the strategic thinking processes of managers?

3. Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?
Research questions

In the Methodology section, I outline how I approached designing appropriate research questions, having regard to the both the literature and my own personal experience.

The literature was instrumental in shaping the design of the research questions, particularly the literature that highlighted a critical approach to cartography and the swing in the strategy literature back to a more practitioner-centric understanding of strategy and strategy making.

I outline in more detail the process I followed in arriving at my research questions, but for the sake of clarity and to help the reader orient themselves to what follows in the rest of this thesis, I state them here:

1. Can cartographic conventions be used to help managers undertake strategy, and if so, how?
2. Can cartographic conventions help us to understand the strategic thinking processes of managers?
3. Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?
Methodology

‘Now it’s been said that the best company you can have in a strange place, is a map.’ ~ MacGyver

The following sections provide an introduction to the ontological and epistemological stance I take in this thesis and serves as the backbone for my argument. I further develop this position through an explanation of the methods that I employed in the co-generation and subsequent analysis of the data. I also state my research questions and explain some of the difficulties that I experienced in undertaking this research and the strategies that I employed to cope with these difficulties.

The final section outlines some of my key insights into my development as a researcher and some lessons learnt.

Ontology

Martin (2002) credits Chia for influencing her thinking on this issue and states that ‘I draw heavily on the work of Chia (1996)’ when she posits the following definitions for ontology and epistemology. She writes: ‘Ontology is a set of assumptions about the nature of reality – how things are. In contrast, epistemology concerns theories about how we know about the nature of reality – that is, how we know about how things are [emphasis in original]’ (Martin 2002, p.30). Whilst these definitions are important and useful in terms of being able to define the relative position a researcher takes in their work, as Martin points out, it can be very difficult to separate a researcher’s ontological position from his or her epistemic one.

The two main dichotomies that exist, ontologically speaking, are around the nature of reality and whether it is objective or subjective, a reified thing that exists ‘out there’ or something that is constructed by each individual as part of a social process, or in other words, ‘in here’. Of course, as Martin notes, these are two extreme positions in the debate and it is possible to imagine a researcher adopting a position somewhere on the continuum between the two.
Epistemology

When a researcher makes a claim as to their ontological position, this has a cascading effect in terms of the types of epistemological positions that he or she adopt as a mechanism for reinforcing their view of reality and I, like others, have an ontological position that rests somewhere on this continuum. I view myself as having primarily subjectivist leanings, but face the difficult position of researching an area that is dripping in objectivity – that of cartography – and using the language of cartography to help understand what I believe is a subjectivist act – that of strategic thinking.

Having claimed that maps are the product of an objectivist ontology, I do wish to retreat somewhat from that statement and note that not all maps are purely objective. As Carter (1999) notes when writing about early nineteenth century coastal mapping, even careful and conscientious mappers sometimes were forced to ‘sketch in by eye’ aspects of a map that were not able to be fixed objectively. This rendered the map in at least part, subjective – and it is not only because mapping techniques of the past were less accurate or sophisticated than those of today. When explaining how the modern weather map is produced, Benoy (2011) is quick to point out that ‘Even with modern science and its sophisticated weather models, final representation of the weather map is partly the result of human interpretation’ (p.16).

Furthermore, Holmes (1991) raises the thorny issue of pictorial maps and points out that they are deliberately constructed to show a privileged view as an attempt to socially construct knowledge. Thus I am left with having to settle on an ontological position that is not neatly delineated. I find myself between the two ends of the ontological continuum, believing that reality is subjective in nature, yet recognising that an objective position can also adequately explain some phenomena.

I have chosen to locate my research in the tradition of the Constructivism/Interpretivism paradigm, one that is primarily subjectivist in
orientation. The closest I can come to what I am referring to is Berger and Luckmann’s (2011) description of social constructivism. Some may argue that I have taken the easy way out by selecting a tradition that I inherently believe in, and that ‘speaks’ to me and the way in which I view the world. Maybe so. But for me, this tradition embraces the idea that ‘…reality is fluid and changing and knowledge is constructed jointly in interaction by the researcher and the researched through consensus’ (Grbich 2007, p.8) and helps me to avoid some of the practical problems associated with undertaking this very immediate, personal research. As a single researcher with no budget and with participants who had competing demands on their time, it was impractical for me to follow around my research participants and observe them from a distance, recording their moves, actions, words and silences in the hope of being able to uncover the truth of their experience in a purely positivist, scientific manner. Moreover, pure observation would not have allowed me to interrogate the participants and ask their opinion on what they thought they were doing. Since I believe that reality is socially co-constructed, I had to choose an epistemological position that allowed me to be involved in that social co-construction.

When investigating the way in which a manager undertakes his or her strategic thinking, it is impossible to divorce the ‘doing’ aspects of their thinking from their experience of what they think strategic thinking looks or feels like. This experience is in part shaped by their embeddedness in the social world and its cultures, and as such, in trying to research this aspect of their work, a variety of research methods were used.

**Emic and etic approaches**

Although at the start of this research I wished to take a direct (and what I thought would be a *safe*) approach to research methods and methodology, it turns out that I have learnt that there are many perspectives on what ‘good methodology’ is and how it should be used. One of the early choices I had to make was whether I was to use an emic or etic approach to my research. Did I want to be an ‘insider’ or an ‘outsider’?
This is not a straightforward question and as Morris et al. (1999) point out, the terms ‘emic’ and ‘etic’ are interpreted differently, depending on the discipline within which the research is being conducted. Emic approaches to research are generally associated with deeply qualitative approaches and according to The President and Fellows of Harvard University (2008), particularly with Grounded Theory approaches. According to Morris et al. (1999, p.782), emic methods ‘…are more likely to involve sustained, wide-ranging observation of a single cultural group,’ whilst etic approaches to research, on the other hand, ‘…are more likely to involve brief, structured observations of several cultural groups.’

So it becomes important when choosing an approach, to bear in mind what I regard as being the cultural group under investigation. At one level, these managers are similar in that they all hold high-responsibility positions and are required to undertake strategic thinking and planning as part of their organisational roles. However, another view of these participants is that they are all from very different organisations, and it might be argued that the organisational culture within which they reside may be a better classification of ‘cultural group’ for the purposes of this study. Never mind the even more macro perspective that I belong to a cultural group based on western styles of thinking about such things as economics and democracy and so find myself in the position of being something of both an insider and an outsider, or, what Morris et al. (1999, p.40) would call a ‘halfie’. The problem with being a halfie (and even for those that don’t identify as halfies but still undertake organisational research) is that ‘…it is as difficult to maintain sufficient distance from what we observe—as it is to translate “what the devil they think they are up to” with sufficient empathy’ (Morris et al. 1999, p.40).

It’s here that Martin (2002) offers some guidance when she suggests that even though it is a difficult thing to achieve, ‘…that the researcher’s task is to find a balance between emic and etic vantage points’ (p.39).

I have tried my best to strike this balance, but it wasn’t easy. At various times of the research, I would find myself more heavily influenced by one mode of thinking and action than another and then later, the opposite would be true.
For example, the Learning by Design (Kalantzis, Cope & The Learning By Design Project Group 2005) framework that I adopted as an overarching guide to the interview structure provided an externally-imposed structure on knowledge codification by the participants; that is, each interview had a theme that was predetermined (Experience, Conceptualisation, Analysis and Application) This was a predominantly etic approach, which flowed through into the analysis of the resulting data. However, within the cycle of interviews, two of the interviews were specifically aimed at trying to understand the participant’s experience and praxis (mostly emic) while the others were more etic in orientation (see table below):

<table>
<thead>
<tr>
<th>Data Co-generation Phase</th>
<th>Etic/Emic Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview 1: ‘Experience’</td>
<td>Emic</td>
</tr>
<tr>
<td>Interview 2: ‘Conceptualisation’</td>
<td>Etic</td>
</tr>
<tr>
<td>Interview 3: ‘Analysis’</td>
<td>Etic</td>
</tr>
<tr>
<td>Interview 4: ‘Application’</td>
<td>Emic</td>
</tr>
</tbody>
</table>

Even though the overarching design of the interview structure was etic, even within this, the data I was searching for required an emic orientation.

In the end, I was forced to live with this tension between the etic and the emic. There were times that I would recognise myself as being more influenced by an etic approach and particularly in data-coding, this made it easier for me to gain an understanding of the relative influences of each code in the overall analysis and helped me to determine whether the code was likely present as an imposed artefact from the methods that I had employed, or whether it represented something from within the data.
The struggle of trying to determine whether a code was more etic or emic in nature also helped me to become more sensitive to the data and encouraged multiple readings. As I explain in the next section, I was able to utilise King’s (1998) template analysis methodology to help account for this structural bias while coding the data.

Ultimately, I had to choose a unit of analysis for this research and I had to decide on what I thought to be the ‘cultural groups’ (Morris et al. 1999). As explained in more detail in the Method Selection section, I utilised Stake’s (2005) typology of a useful case study to select the level at which data co-generation and analysis would occur.

**Why ‘Learning by Design’?**

In seeking to answer the question of whether or not a cartographic lens may be able to help managers to undertake their strategic thinking, the managers needed to understand what the cartography lens has to offer. In effect, the managers needed to learn something about cartography in order to understand how it may (or may not) be useful in their praxis. This learning, though, had to occur in the context of their own understanding of cartography and strategy – in essence, it had to take into account each manager’s unique experience. Furthermore, each participant in the research is situated within a larger cultural and historical moment. As each participant’s lifeworld is unique, the methods through which the learning was to occur had to be flexible and tailored to that set of circumstances, yet also cognisant of the research situation. This recognition that each participant is an individual, with individual experiences and knowledge, strengthens the logic of applying a case methodology (Stake 2005) within the research, as explained later in this chapter.

The Learning by Design framework has proven to be a robust and effective mechanism for preparing students for a future society that is dominated by a knowledge creation and knowledge management paradigm; the ‘knowledge society’ (Kalantzis, Cope & The Learning By Design Project Group 2005). It is a framework that can help prepare learners for a future that ‘...will require skills
and sensibilities that are significantly different from the past’ (Kalantzis, Cope & The Learning By Design Project Group 2005, p.17). In the context of this research, the participants were all self-identified as having some limited knowledge of cartography. None of the participants claimed to be an expert in the area, and from this perspective, they are learners.

The Learning by Design framework (Kalantzis, Cope & The Learning By Design Project Group 2005) rests on the foundations of four main ‘knowledge processes’, each of which have two dimensions, and it is these knowledge processes that have guided my interaction with the interviewees. Broadly, this process involved a series of interviews that were ‘themed’ around the four knowledge processes as a way of understanding how each participant understood their strategic thinking practices and as a means of exploring these practices as set against a cartographic framework. In this way, the use of the framework also helped locate the research in a contemporary moment of society.

The four knowledge processes are described in the following table (adapted from (Kalantzis, Cope & The Learning By Design Project Group 2005, pp.73-74)):

<table>
<thead>
<tr>
<th>Knowledge Process</th>
<th>Brief Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiencing</td>
<td></td>
</tr>
<tr>
<td>…The Known</td>
<td>Personal knowledge, evidence from learners’ everyday lives.</td>
</tr>
<tr>
<td>…The New</td>
<td>Immersion in new information and experiences.</td>
</tr>
<tr>
<td>Conceptualising</td>
<td></td>
</tr>
<tr>
<td>…By Naming</td>
<td>Definition and application of concepts.</td>
</tr>
<tr>
<td>…With Theory</td>
<td>The ‘putting together’ of concepts that</td>
</tr>
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</table>
make discipline knowledge.

<table>
<thead>
<tr>
<th>Analysing</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>…Functionally</td>
<td>Cause and effect, what things are for.</td>
</tr>
<tr>
<td>…Critically</td>
<td>People’s purposes, motives intentions, points of view.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applying</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>… Appropriately</td>
<td>‘Correct’ application of knowledge in a typical situation.</td>
</tr>
<tr>
<td>… Creatively</td>
<td>Innovative application of knowledge, or transfer to a different situation.</td>
</tr>
</tbody>
</table>

The knowledge processes as described above provided a broad structure from within which to set about co-generating data and also to have regard to when analysing the data. In the application of these frameworks to the co-generation of data phase of the research, I sketched out a series of guide notes that I used during the interviews. These are reproduced here:

**Experiencing the known**

What do the managers ‘know’ about strategy and maps? What is their lived experience? I asked them questions looking to get a high-level feel for their experiences so far with strategy, strategic thinking, maps and mapping. This phase of data co-generation also seeks to get a sense of the participant’s lifeworld and history.

**Experiencing the new**

Here I ask the interviewees to examine some other maps – using books on cartography and also physical maps, I ask them to examine the maps and get a feel for the different types of mapping that are available. What I found to be most effective was to use books that contained both ancient and modern maps; in this instance I found Eherenberg (2006) to be particularly effective. This book has a range of maps within its pages, but as they are all
contained in one compendium, the research participants are reassured that they are all, in fact, legitimate maps. Early iterations of this process involved me bringing in more extreme examples of maps, including maps from the series *An Atlas of Radical Cartography* (Gordon et al. 2008), but it seemed that the participants were uncomfortable with this, since these maps lay too far outside their normal experience. It turns out that I needed to find a way to show maps to the participants that were within their zone of proximal development (Chaiklin 2003). Broadly, this zone of proximal development refers to an instructive technique where a more experienced person (teacher/expert) demonstrates or shows a learner something that is within their ability to grasp, but new to them. Widely attributed to Vygotsky, this zone of proximal development is similar to the idea of stretch targets (Thompson, K, Hochwarter & Mathys 1997), which need to be achievable, but just out of reach.

**Conceptualising by naming**

Here I introduce some of the cartographic concepts to the interviewees through exposure to some of the naming conventions found in the critical cartography literature and the cartographic literature generally. The concepts that I chose were primarily drawn from MacEachren (1995) and Monmonier (1996). These two sources provided both a conceptual and critical reading of the functional elements of a map and they seemed to synthesise the concepts of many writers on cartography the most succinctly.

**Conceptualising with theory**

Here I explore with the participants how the mapping concepts may be useful in their strategic thinking. Together we seek to build theory based on the grounded reality of their experience together with strategic thinking and their knowledge of maps. This is a theory-building phase of the research.

**Analysing functionally**

What does a map need? What does a strategic plan need? What does strategic thinking entail? How is it done? What tools are required? This area
may have significant overlap with ‘conceptualising by naming’. As someone names something, associations may be quickly drawn and we may shift backwards and forwards through the ‘naming’ and ‘analysing functionally’ stages.

**Analysing critically**

More jumping backwards and forwards here. While the interviewees are thinking about the various cartographic aspects in terms of the critical aspect, they will also be encouraged to think about the human aspect of their strategic plans and therefore their thinking processes. Who does the strategic thinking? Is it an individual process or a collaborative one? If it is collaborative, who is involved? What are the agendas of those who are involved? How does power and influence play out in this process? Whose agenda is served?

**Applying appropriately**

This phase of the data co-generation process looks to explore how the strategic thinking concepts are applied in the participant’s lifeworld. Questions within this phase of interviewing look to seek concrete examples of the application of the concepts so far explored.

**Applying creatively**

Here, the research seeks to explore if and how the cartographic concepts might be utilised as a mechanism for improving the strategic thinking processes of the participants.

The listing of the knowledge processes above may suggest to the reader that they must be applied in this particular sequence. However, these knowledge processes are mechanisms for understanding the lifeworld of each participant and provide multiple entry points to interacting with that lifeworld. Depending, for example, on the previous experience of the participants in understanding the elements of a map, it may be that less explanation is required. Also, depending on the particular learning preferences of the
participant, it may transpire that as they make links between concepts, his or her own praxis and their lifeworld situations, that they may ‘jump’ forwards or backwards through the knowledge processes. Indeed, one of the participants showed a particular fondness for getting to the application of the concepts as quickly as possible.

The strength of the framework as a tool in the data co-generation phase was that I could use it to guide the questions posed to the participants. This ensured that all of the knowledge processes were addressed and therefore strengthens the claim that the methodological processes involved in the research are appropriate for the cultural and historical context within which the research is located.

**Contribution of the Learning by Design framework to the research project**

In a small way, this use of the Learning by Design framework as a mechanism for guiding and semi-structuring my interviews appears to be a novel approach to research design and methodology, and as such offers a small contribution to the knowledge informing research design. It dovetails well with Wagner’s (1997) co-learning agreements and, since the interviews were located within distinct epistemic cultures (Knorr Cetina 1999) and represented individual cases (as defined by Stake (2005)) in which I am seeking to understand the individual experiences of these managers, it makes sense to use a method that rests on the experience of those managers and their lifeworlds.
The research question(s)

My original research questions were devised as a means of helping to explain what I thought of as deficiencies in the explanation(s) of how strategic thinking is done. These deficiencies were identified through a mix of personal experience and professional enquiry.

This research design initially aimed to answer the following questions:

1. Can the process of strategic thinking be identified and replicated?
2. Are there any common practices, processes or thinking patterns that Australian managers use when undertaking strategic thinking?
3. How does strategic thinking inform the strategic decision making of managers in Australian organisations?
4. Can a unifying model of strategic thinking be designed in order to aid Australian managers in improving their strategic thinking practices?

I look back now at these questions and recognise them as being far too broad to enable a single researcher with a limited budget to have any hope of designing a research project able to answer these questions within a reasonable timeframe. The wording of the questions is too ambiguous and the scope too ambitious. Indeed, I might as well have asked: “What is the nature of ‘thought’ and can it be explained?” One of my supervisors gently asked me if I had “set out to understand the universe and everything in it”. At the time I laughed, but over the next few months I began to understand the implications of that statement and I set about trying to develop a clearer focus for my research.

I think the original choice of question(s) shows my relative naiveté as a researcher. Indeed, during one of my early supervision meetings where I presented my work to my supervisors, their feedback was such that one accused me of not having an understanding of the research process and of underestimating the effort required to answer these questions, as well as the methodological design challenges that these questions posed. I realised that I needed to refine these questions in order to undertake a manageable project,
and therefore carefully select fields of study through which to investigate the questions.

The original research questions have a strong action bias to them and it was always my intention to investigate the ‘doingness’ of strategic thinking as experienced by managers. This combination of strategic thinking and action meant that when locating this research within the larger discipline areas of organisational and management research, I could focus on the Strategy-As-Practice sub-field.

The Strategy-As-Practice sub-field is concerned with the position that, as researchers, we ‘examine strategy not as something a firm has, but something a firm does’ (Jarzabkowski 2004, p.529). Scholars in this field are interested in the way in which strategy is enacted at a micro level. For a more complete overview of the Strategy-As-Practice field, I draw your attention to the Strategy-As-Practice literature review section within this thesis.

The other choice I had to make was to choose a conceptual lens through which to examine strategic thinking and the Strategy-As-Practice sub-field in particular. I chose a cartographic lens.

Strategists are concerned with making decisions that are future-oriented, in an effort to position their organisation in such a way as to outperform others. Whilst strategists are also interested in the near-term decisions of the organisation (its tactics), it is the longer-term performance of the organisation that is their main area of concern.

Strategists use many metaphors to describe the kind of work that they do, including those with a basis in cartography. Strategic plans are often described by using terms such as ‘roadmap’ or talking about documents that will aid an organisation on its ‘journey’ or set its ‘direction’. Whilst the use of these metaphors is relatively common, there is little research in the Strategy-As-Practice field that directly utilises cartography as a conceptual lens. The mapping metaphor has a strong intuitive appeal and I am interested in whether it may be employed more practically.
The use of the cartographic lens helped refine my research activities even further, guiding my methodology and providing a boundary to the extent of the research. As such, my research questions were subsequently refined to:

1. Can cartographic conventions be used to help managers undertake strategy, and if so, how?

2. Can cartographic conventions help us to understand the strategic thinking processes of managers?

3. Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?
Ethics

This research conforms with RMIT University Human Research Ethics Committee guidelines and was approved on December 2nd, 2008 (PHRESC Register No 743). A further extension of time was granted on April 4th, 2012. Official letters of approval are attached in Appendix One of this thesis.

Potential participants were approached to take part in the research and each was supplied with a plain language statement outlining the nature of the research, any risks associated with participation and the procedures for raising any concerns or withdrawing from the research at any time.

The participants were also asked if they would permit both audio and/or photography/videography of their participation as part of the research process. They were supplied with consent forms to sign to indicate their willingness to have their data/images recorded. A copy of the plain language statement and the data recording consent forms are also attached as part of Appendix One.

As part of the research design, participants were to be de-identified. To that end, I have utilised pseudonyms throughout this thesis and have disguised any identifying information including the gender of the participants.
Methodology and methods

In this section, I outline the methodology and methods that I have used in order to generate data to help answer the research questions. The methods that I have relied upon are each tied to the ontological and epistemological positions that I have taken, and each method provides its own distinct set of advantages and disadvantages. In designing the research, I have tried to take advantage of the positives of each method and minimise the negatives. Within the broader context of case analysis, these methods can be placed in one of two categories: 1) data generation or 2) data analysis.

Case analysis (methodology)

This research hinges on four individual cases, which conform to what Stake (2005) indicates as having useful characteristics by which to identify genuine cases: that is, they are ‘specific, unique, (and consist of a) bounded system’ (p.445).

The choice of case methodology was based on a desire to understand the particular praxis of senior strategy practitioners yet not to prove the generalisability of a theory or position. For this reason, the number of cases undertaken was relatively small, thus helping to minimise the damage that ‘…occurs when commitments to generalize or theorize runs so strong that the researcher’s attention is drawn away from features important to understanding the case itself’ (Stake 2005, p.448).

To use Stake’s (2005) typology of cases, the kind of case work that this research is built upon is categorised as intrinsic case work:

‘I call a study an intrinsic case study if the study is undertaken because, first and last, one wants better understanding of this particular case. It is not undertaken primarily because the case represents other cases or because it illustrates a particular trait or problem, but instead because, in all its particularity and ordinariness, the case itself is of interest.’ [Emphasis in original.] (p.445)

The advantage that this methodology has over other kinds of research (particularly large-\(N\) studies) is that it affords the opportunity for the researcher
to get close to those under study and this affords the opportunity for the participants to ‘talk back’ so as to correct any structural bias that may occur in the study something that authors of large-N studies have less opportunity to do (Flyvbjerg 2006). As I note later in this chapter, the opportunity of the participants to ‘talk back’ is also a benefit of what Wagner (1997) calls a co-learning agreement in which the researcher and participant agree to work closely together during the research and interpretation phases. The dual effect of working both co-operatively and closely is seen as a particular strength of this research. Not only was I able to ‘see the whites of their eyes’, I was also able to interrogate the participants further when I got the feeling that they were being evasive or had more to say. This led to a richer data set.

As the interviews progressed, it became easier to ask more pointed questions in order to delve into the participants’ practices, and as we built trust and the participants became more familiar with the research process, it seemed that they became more forthcoming, including admitting to errors in judgment, or becoming more self-critical. I felt that this building of trust and rapport was important in generating data that was richer and more nuanced. In order to facilitate this trust-building, I reminded the participants at the beginning of each interview that all information would be de-identified and that we would jointly undertake a review of the transcript of the previous interview to establish if they wished to alter, edit or clarify anything.

The structure of the interview cycles also helped to build trust. As outlined in the section on Learning by Design, the first interview with each of the participants focused on experiences that they’d previously had and on how these experiences may have helped shape the kind of manager and strategic thinker that they had become. These interviews covered a lot of ground and depending on the specific case, could delve into areas as diverse as childhood experiences, formative educational experiences, early employment experiences and, of course, more recent career experiences. Primarily, the aim of these initial interviews was to establish an understanding of the kinds of experiences that the managers had had, and to facilitate further loose structuring of
subsequent interviews. This concern with building trust and rapport was reinforced in subsequent interviews, where I would refer back to earlier statements that the participants had made, both as a mechanism for generating more data, but also to show the participants that I was interested in what they had to say and that I found their personal experiences valuable. Even though some of the information expressed in these interviews was of a private nature, over the course of the research none of the participants took up my offer to alter the records of interview.

At this point it is worth a note about the participant selection process.

As noted in the plain language statement, participants were approached if they satisfied any of the following (broad) criteria:

☐ You have been recommended as someone who often displays qualities normally associated with strategic thinking by a mutual acquaintance, or;
☐ You are in an organisational role that involves you making strategic decisions, or;
☐ You have been selected based on information gathered from public sources (e.g. websites, newspapers, journals) that indicate that you seem to display qualities normally associated with strategic thinking, or;
☐ You are personally known to the investigator as the type of person who often displays qualities normally associated with strategic thinking.

In total, four participants were approached who satisfied at least one, and in some cases more, of the above criteria. As is indicated in the discussion on the case analysis, undertaking this kind of method can produce a rich and detailed dataset. This research was concerned with understanding the specifics of the participants’ praxis and the data generated was both extensive and detailed. It was decided that a small number of participants would satisfy data co-generation requirements when having regard to the specific methods (as detailed later in this chapter) employed in this research.
Data generation

With the ontological and epistemological perspectives foregrounded in my research, I set about co-generating data and subsequently analysing it in order to understand the phenomena.

Co-generation of the data occurred through the use of semi-structured interviews (Mason, J 2002) that were held at a time and place convenient to the participants. Often this was at their place of work, although some were held at the University. During each interview, audio recordings were made of the utterances of the participants and where appropriate, video recordings were undertaken as well as photographing of any relevant data that was drawn or in some other way (i.e. textual/gesturally) represented.

The interviews were conducted in the context of a mutual understanding of our individual roles in co-creating meaning through the interview process – an understanding that was grounded in the mutual understanding of the ontological and epistemological position as outlined above. This mutual understanding was negotiated at the start of the interview series and revisited periodically as needed through on-going discussion. Often this discussion was held in the context of Wagner’s (1997) framework of research agreements.

Co-learning agreements

Co-learning research is research that is designed in such a way that there is on-going involvement between the researcher and the research participants. Wagner is the main proponent of this and developed his three-part framework to inform research which he undertook in schools. I have adopted the framework here, as I believe it supports my ontological position that reality is socially constructed and strengthens the epistemological basis of the research by foregrounding the participatory relationship in co-authoring data. Wagner (1997) states that there are three possible types of agreements that are struck when undertaking research with educators: those agreements are ‘data-extraction agreements, clinical partnerships, and co-learning agreements’ [emphasis in original] (p.14). Each agreement has an impact in that its content will determine
the types of methods that a researcher uses in order to generate opportunities for data collection. For example, if we were to think of these agreements as occupying a continuum of engagement and sharing between the researcher and the participants, at one end of that continuum would be research that relies upon the use of data-extraction agreements:

‘...a key feature of this form of cooperative research is that asymmetry of understanding and purpose is quite acceptable. Researchers and practitioners view their roles as distinct. Each may or may not respect the other, but neither expects the other to share her or his own perspective.’ (Wagner 1997, p.15)

In this situation, there is little interaction between the researcher and the participant in terms of analysing or interpreting the data.

At the other end of the continuum lie co-learning agreements:

‘Co-learning agreements are even more interactive than the clinical form of cooperation...and they reduce several, but not all, of the asymmetries that characterize research conducted in extractive and clinical modes. For example, the division of labor between researchers and practitioners becomes much more ambiguous, as both researchers and practitioners are regarded as agents of inquiry and as objects of inquiry.’ [Emphasis in original] (Wagner 1997, p.16)

This approach to the roles of the researcher and the participants in the research process exhibits similarities with methods used in Cogenerative Inquiry (Greenwood & Levin 2005).

Before the interviews began, I explained the concept of the co-learning agreement with each of the participants and explained the nature of the work that I was interested in. Each expressed that they understood the nature of the research and that they were looking forward to being ‘agents of inquiry and as objects of inquiry’. One participant in particular was keen to expand her knowledge about her own praxis and was looking for feedback and opportunities to develop it further.

Using an approach that is based on the idea of co-learning agreements had impacts on the design and execution of the data co-generation stage of the
research. In accordance with my ethics application and approval, I provided the participants with the opportunity to review the interview transcripts and add, alter or delete as he or she thought appropriate. I viewed this as a type of member-check activity and saw it primarily as a means of ensuring that the respondents were happy with their answers before we moved onto the next stage of interviews.

Member-checking is important, as it gives the researcher an opportunity to solicit further understanding of the data with the participant, especially if the participant disagrees with what has been found (Schwandt 2007). There are some challenges that arise with this method, including the fact that if a participant does object to the interpretation of the data, it is then for the researcher to understand what the nature of that objection is, or, as Schwandt (2007) has shown, it may be that he or she don’t disagree with the interpretation of the data, but rather the fact that it is to be published publicly, or that they have a more fundamental disagreement with the interpretation of their interview.

To overcome this, I began each subsequent interview with an overview of what I had been finding and a preliminary interpretation of the data. This was also an opportunity to refresh the participant’s mind about the aims of the research, and in the case of some significant time having passed between interviews, it would help remind him or her of their commitment to the research. This also gave me the opportunity to ask if they had anything further to say or contribute, and helped in the semi-structuring of questions that would be asked in the next interview session.

It was important that I undertook the interviews and member-checking in ‘rounds’ – that is, all the ‘round one’ interviews were completed and transcripts edited and sent for member-checking before any ‘round two’ interviews began. The reason for this was that each round of interviews had a particular theme that I was trying to tease out, and I had to make allowances for that in the coding of the responses. For example, the main theme of round one was to gain an understanding of the experience of the participants, which then allowed me to design the next round of questions. This naturally had an impact on the way
in which the participants answered the questions – since I was asking predominantly history-based (and therefore experience-based) questions, one of the dominant themes in the round one answers would, naturally, be on experience. This is problematic in that when coding, I had to decide how to weight the data in terms of the types of questions that were being asked. Was the ‘experience’ code I was finding in the data a reflection of the actual experience of the participant, or were they answering the question in such a manner because of the overall thrust of the questions being put to them? During the data analysis stage, application of King’s (1998) template analysis helped reduce exposure to this structurally-imposed coding of data through carefully selected a priori codes.

The semi-structuring of interview questions was informed by two separate but interrelated acts: reading the literature and undertaking the interviews. This emergent design (Mathison 2005) allowed for flexibility in the scope and direction of the questions and allowed me to tailor questions for each participant based on his or her own reported experience or comments from previous interviews. In this manner, I built a rich, individual record of interview for each participant, corresponding with Stake’s (2005) exhortation that cases should be ‘specific, unique, (and consist of a) bounded system’ (p.445).

This afforded a recursive element to my research and allowed for the researcher and the participant to gain a closer, shared understanding of the research and our relationship. Even though I had limited available time with these very busy executives, I sought to build a ‘richer social life’ (Wagner 1997, p.18) during the time we had together. ‘One consequence of supporting richer social life is that projects designed along clinical or co-learning lines may have greater power to reframe participants' understanding of their own work’ (Wagner 1997, p.18). This reframing appeared to occur as each of the participants noted that the interviewing process had triggered deep reflection on their part, and in at least one case, led to a direct change in the way the participant considered their own praxis. In the following account, the participant was particularly excited to share with me her experience of using a map as a mechanism for
building understanding at an industry conference. The participant was so excited that she launched into the story the moment she entered the room and I had to scramble to get permission to record what she was saying:

JASON: Okay, shoot.

RANI: Yeah, yeah. So what I said to the [industry sector] Leaders’ Conference was that, I said, “What I want to show you today is inside my mind and the map that I build, um, and the logic of that map, so that when I go and sit down with (the) Minister, who’s sitting there…um…I picture this map and I talk logically. It’s like I’m following a path.”

JASON: Yeah, yeah.

RANI: Now it’s actually a supply chain, so it’s got farm, factory, market.

JASON: Yep.

RANI: Right. And so it’s just, that’s all it is. Farm, factory, market, with issues kind of like streets coming off this underground map. And the amount of people who came up to me and said, “Can I have that? You know? Can I have that?” I mean, it’s a very, very simple…”

[1/3/1-15]

The above vignette demonstrates the willingness of the participant to engage with the research process, even though the series of interviews scheduled had yet to be completed and the utilisation of the cartographic concepts in a public setting such as an industry conference goes to the heart of the value in instituting the co-learning approach.

The intention was for the interviews each to last for an hour and for each participant there were to be four in total, equalling a total of 16 hours of data co-generation across all participants. In actuality, that schedule didn’t always work for the participants. In some cases, the participants wished to combine two of the interviews together into one long two-hour block instead of having to undertake two separate interviews, which would have the impact of fragmenting
their diary in ways that they didn’t want. In other cases, the participants seemed quite content to continue well past the end of the initially-agreed interview time. As the epistemological basis of the research was based on co-generation of data and that this was located within a complex social sphere, the research method has to be flexible enough to deal with sudden changes. So in total there were 18 hours of interviews. Furthermore, as the participants became more comfortable with the research process I began to videotape the interviews. In addition to the 18 hours of audio recordings, eight hours of video data was co-generated.

In the following table, I indicate the quantum of interviews and the length of each indicated by participant, together with the main theme of the interviews:

<table>
<thead>
<tr>
<th>Participant</th>
<th>Interview</th>
<th>Length</th>
<th>Main theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rani</td>
<td>Interview 1</td>
<td>1.5 hours</td>
<td>Experience</td>
</tr>
<tr>
<td></td>
<td>Interview 2</td>
<td>2 hours</td>
<td>Conceptualisation</td>
</tr>
<tr>
<td></td>
<td>Interview 3</td>
<td>1.5 hours</td>
<td>Conceptualisation / Analysis / Application</td>
</tr>
<tr>
<td></td>
<td>Interview 4</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Staci</td>
<td>Interview 1</td>
<td>1 hour</td>
<td>Experience</td>
</tr>
<tr>
<td></td>
<td>Interview 2</td>
<td>1 hour</td>
<td>Conceptualisation</td>
</tr>
<tr>
<td></td>
<td>Interview 3</td>
<td>1.5 hours</td>
<td>Conceptualisation / Analysis / Application</td>
</tr>
<tr>
<td></td>
<td>Interview 4</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Theresa</td>
<td>Interview 1</td>
<td>1 hour</td>
<td>Experience</td>
</tr>
<tr>
<td></td>
<td>Interview 2</td>
<td>2 hours</td>
<td>Conceptualisation / Analysis</td>
</tr>
<tr>
<td></td>
<td>Interview 3</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interview 4</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Janelle</td>
<td>Interview 1</td>
<td>1.75 hours</td>
<td>Experience</td>
</tr>
<tr>
<td></td>
<td>Interview 2</td>
<td>1 hour</td>
<td>Conceptualisation</td>
</tr>
</tbody>
</table>
My approach to data analysis

The interviewing process generated large volumes of rich data that needed to be analysed and the analysis proceeded in two stages. The first stage involved applying a template organising [sic] style (see Crabtree & Miller 1999; King 1994; and King 1998) as a way of first organising and structuring the data, and then applying a modified Grounded Theory approach to more deeply interrogate the data.

Template analysis is a useful way of dealing with large amounts of rich data. Crabtree and Miller (1999) describe it as such:

‘The template organizing style immerses the researcher in the often massive and confusing jungle of text, with the set purpose of identifying “chunks” of text so as to facilitate future data retrieval and analysis. The complete analysis process of organizing, connecting and corroborating/legitimizing involves (a) creating a code manual or coding scheme, (b) hand or computer coding the text, (c) sorting segments to get all similar text in one place, and (d) reading the segments and making the connections that are subsequently corroborated and legitimized. The interpretive process is then completed with telling the story or representing the account.’ (p.167)

In undertaking template analysis (also sometimes referred to as ‘thematic analysis’ (King 1998)) of the data, I first coded the interview transcripts using a priori codes contained in ‘a codebook…built on existing knowledge (a priori)’ (King 1994, p.26). The construction of this codebook involved recording individual codes that were established earlier through reading the literature and through my own experience as a researcher and practitioner in strategy-making. This kind of code generation is sometimes referred to as ‘concept-driven coding’ (Kvale & Brinkmann 2009) and ‘uses codes that have been developed in advance by the researcher, either by looking at some of the material or by consulting existing literature in the field’ (p.202). These a priori codes were organised into two main lists: the first was a list of codes that had emerged from my reading of the mapping and cartography field. The second list was one that emerged from my readings within the strategy field, (including the strategic
thinking literature), and was one that was grounded in my professional experience in strategy-making. I eventually added another list – a more focused list of codes – that arose from my reading of the Strategy-As-Practice literature. These three umbrella codes are what King (1998) calls ‘highest order’ (p.122) codes, maintaining that template analysis is based on a system of developing hierarchical codes, and suggesting limiting the number of sub-codes within each as a means of preventing the analysis from becoming too unwieldy.

Obtaining permission to either audio or video record the interviews was important as part of the research process. Recording afforded me the opportunity to be more fully involved in the interview as a co-generator of data. Had I not relied on audio or video recording, I would have had to take extensive field notes, which may have necessitated significant breaks in the interviews. Mason (2002) is careful to point out that all methods that are relied upon in order to record interactions have advantages and disadvantages. Audio recording allowed me to focus on the co-generation of data within the interview situation and to retrieve the data at a later time for closer analysis if required. In fact, closer analysis through re-examining the data proved to be particularly valuable, as it enabled me to reflect on those aspects of the data that were suppressed as part of the transcription process – those of inflection and emphasis. This was particularly important for Theresa and Janelle (participants three and four) as their manner of speaking was distinct and the use of emphasis appeared to be important as a mechanism for them to indicate ideas that they regarded as important.

As a method of being able to indicate the location of the quote that I am using for data analysis purposes, I have instituted the following referencing system: (Participant/Interview number/Transcription line numbers). For example, if I was relying on a quote from Theresa, which was uttered during the first interview, and it can be found between lines 456 and 534, the reference at the end of the quote would appear as [3/1/456-534].
Applying the codes

The first pass through the data was essentially a process of applying the *a priori* codes and was a mostly mechanical process – an act of recognising passages that would satisfy the *a priori* codes and applying them. This process was mostly uncritical. I acknowledged at the time that this was not supposed to be the first and final pass of the data, that other codes may be applied on later passes and that other, non pre-determined codes might reveal themselves in later passes. At this stage, it was more a case of believing that the frame of the map was known (the extent of the territory) and trying to identify place-names within the map.

Whilst this is unsatisfying in the first instance, in relation to trying to add substantially to the body of knowledge, it was clear that the analysis needed to begin somewhere. Retracing the steps of others is a good way to understand the territory, and also allowed me to stop, pause and consider aspects of the journey that were not reported in previous work.

These early passes through the data were also important in helping me to become familiar with the whole corpus of data available to me. Ritchie and Spencer (1994) describe this familiarisation process as an ‘immersion in the data: listening to tapes, reading transcripts, [and] studying observational notes’ so as to facilitate the “…listing [of] key ideas and recurrent themes” (p.179).

The familiarisation process also allowed me to become alert to other codes that were not included in the initial codebook construction.

Indeed, this was highlighted with the serendipitous discovery of the very recent work of Kaplan (2011), wherein she highlighted the role of technology as being an integral part of the Strategy-As-Practice field within an organisation, and wherein she calls attention to the way in which managers utilise (in this case) PowerPoint as an ‘epistemic machinery’ (p.320). It was this article that helped orientate my own reading of the data with maps being a mechanism (a technology) for creating meaning and knowledge within the strategy discipline. Within the familiarisation stage, emergent codes such as ‘maps as communication devices’, ‘maps as conversation aids’, ‘maps as idea
crystallisation devices' became evident. The finding of Kaplan’s work enabled me to roll these codes up into a major theme of ‘epistemic machinery’ and eventually to conceptualise them more fully as ‘epistemic technology’.

Template analysis provided the main epistemological framework for data analysis, but I still found it useful to approach the data analysis stage with an eye to completing Grounded Theory. Template analysis lends itself to critique in determining how the codes are selected, and at which level. The researcher has to make a decision about the unit of analysis and questions arise about how that decision is made. Grounded Theory, particularly in its earlier constructions, provides an antidote to this criticism.

The two main streams of Grounded Theory are usually described as being either ‘Glaserian’ or ‘Straussian’, after the academics who invented the methodology in the middle part of the last century. Where Grounded Theory differs from template analysis is in the treatment of the a priori codes; template analysis allows for the existence of a priori codes whereas Grounded Theory doesn't: ‘…there is no a priori definition of codes’ (King 1998, p.118). King’s depiction of Grounded Theory appears to be based on the original work undertaken by Glaser and Strauss and doesn’t take into account some of the methodological variations of more recent Grounded Theory applications. Grbich (2007) notes that the pure approach to Grounded Theory is not the only way to approach data analysis, and points to instances where Straussian Grounded Theory and Heideggerian hermeneutics have been combined to examine nursing practice. Similarly, Glaserian Grounded Theory and Husserlian phenomenology have been combined, as have Straussian Grounded Theory and postmodern feminism, and even postmodernism and post-structural Grounded Theory have been combined in various research studies.

Thus, selecting a methodological approach that supports the epistemological position I have adopted in this research was a critical step, and a wide variety of ‘flavours’ of Grounded Theory enabled me to be quite specific in my selection, ensuring alignment between my ontological, epistemological and methodological positions. Indeed, Grounded Theory provides ‘a set of flexible
analytic guidelines that enable researchers to focus their data collection and to build inductive middle-range theories through successive levels of data analysis and conceptual development’ (Charmaz 2005, p.507), which allowed me to find methodological approach to help answer my research questions.

I settled on a constructivist Grounded Theory approach that:

‘...adopts grounded theory guidelines as tools but does not subscribe to the objectivist, positivist assumptions in its earlier formulations. A constructivist approach emphasizes the studied phenomenon rather than the methods of studying it. Constructivist grounded theorists take a reflexive stance on modes of knowing and representing studied life. That means giving close attention to empirical realities and our collected renderings of them — and locating oneself in these realities. It does not assume that data simply await discovery in an external world or that methodological procedures will correct limited views of the studied world. Nor does it assume that impartial observers enter the research scene without an interpretive frame of reference. Instead, what observers see and hear depends upon their prior interpretive frames, biographies, and interests as well as the research context, their relationships with research participants, concrete field experiences, and modes of generating and recording empirical materials. No qualitative method rests on pure induction—the questions we ask of the empirical world frame what we know of it. In short, we share in constructing what we define as data. Similarly, our conceptual categories arise through our interpretations of data rather than emanating from them or from methodological practices (cf. Glaser, 2002). Thus, our theoretical analyses are interpretive renderings of reality, not objective reportings of it.’ (Charmaz 2005, pp.509-10)

The generation of a priori codes aided in structuring the interviews in such a way that data analysis was, to a certain degree, ‘built into the interview situation itself’ (Kvale & Brinkmann 2009, p.202). This provided for advantages later in the data analysis phases of the research:

‘In such forms of analysis—interpreting “as you go”—considerable parts of the analysis are “pushed forward” into the interview situation itself. The final analysis then becomes not only easier and more amenable, but also rests on more secure ground. Put strongly, the ideal interview is already analyzed by the time the sound recorder is turned off. There are social and ethical restraints on how far the analysis of meaning can be undertaken during the interview itself, but this may serve as a methodological ideal for interview research.’ (Kvale & Brinkmann 2009, p.202)
The critical reader may ask the question: “Why not just use a pure Grounded Theory approach?” Had I done so, the analysis of the data would have almost certainly produced many codes that related to the knowledge processes framework (Kalantzis, Cope & The Learning By Design Project Group 2005) that I used as a meta-structure for my interviews, and since I hold the ontological position that reality is socially co-constructed, and my epistemological methods included relying on co-learning agreements (Wagner 1997), this process would have been wildly inefficient and may have over-weighted the analysis, as reflected by the utilisation of the Learning by Design Knowledge Processes – I wished to avoid this.

Furthermore, the careful reader will note that the length of time spent with each participant varied. This was primarily in response to how readily the participant engaged with the content of each interview, the questions and concepts held within them, and the amount of time each participant had available. The participants each reacted differently to the nature of the questions and particularly during the conceptualisation phase of the co-generation cycles, three of the participants commented on how mentally taxing the interviews were.

Methodological limitations

All subjective data is open to interpretation; indeed that is the essence of a constructivist ontology. Another investigator may interpret the data differently to me, I may have misinterpreted the data in the eyes of the participants (although member-checking of transcriptions sought to reduce this), or the participants themselves may have been untruthful or selective in what they revealed during the recorded parts of their interviews.

Indeed, at the conclusion of one interview, after the audio and video recording devices had been turned off and put away, a participant revealed further insights into their organisation and opined on its management – using the whiteboard in the room to show (map) relationships. During the whole interview, she had sat in a chair and even though she had been invited to use
the whiteboard, didn’t. It wasn’t until after the interview had formally concluded that she took up that invitation and began to map. This data, though relevant and rich, has not been used in this research – clearly the participant had considered the interview over and once the recording equipment was switched off, they regarded everything subsequently said as ‘off the record’. Nevertheless, this instance highlights that whilst the participant had been forthcoming during the formal (recorded) interview process, interesting and useful data was either intentionally or unintentionally withheld. All of these factors are potential faults with the research design and leave this study open to critique.

**Chapter summary**

This methodology of interviewing and working with practitioners who have demonstrated a commitment to strategic thinking allowed me to examine at close range the techniques that were selected and used and also provided me with personal insight into my own praxis of strategic thinking. By adopting the Learning by Design framework to guide the research, I was also able to get feedback from the practitioners as to whether the cartographic frame was helpful to their work, thus reducing the time between conceptual development and implementation.

When using the Learning by Design framework to structure the interviews, it is worth remembering that the conceptualisation phase of the interview series can prove quite taxing and that fatigue can set in. I found it valuable to warn the participants of this effect and remind them that if they felt tired or needed a break, that we could pause the interview and resume at a later time. Three of the four participants took advantage of this offer. Researchers following this particular method would do well to allow time for breaks, especially when the participants have busy schedules and keep to a tight timetable.

Finally, as well as providing an integrated framework for my research, this approach to studying the phenomena took advantage of what I consider to be some of my personal strengths: those of being deeply interested in the topic
(which is something of which Van Manen (1990) would approve); of preferring deep and meaningful engagement on both a professional and personal front when engaging in research; and of using methods that are genuinely participatory and through which rapport can be built.
Findings and discussion

This chapter includes the findings and the data that I have relied upon in forming my conclusions. It consists of two main parts:

Part 1 – Data relating to general responses to maps.

Part 2 – Data relating to the individual elements of maps (each of the eleven elements having their own sub-section).

In the subsequent sub-sections, I have edited the quotes in the interests of length. Amongst other things, I have removed such utterances as “uh-huh” and “mmmmmm” as a matter of course, but I have also sought to select those parts of the data that best and most succinctly represent what I think the participant meant. Where I have selected non-adjacent sections from within the same data-co-generation sessions, I indicate this with ellipses (...). Where I have run the responses of the participant together (i.e. I have removed my interjections/comments as they don’t add anything of value to the quote), I indicate it clearly with the symbol [EFL] which is my shorthand for ‘edited for length’. Where I have taken quotes from different data co-generation sessions, this is indicated with interview/line number codes. Where there has been no data generated in relation to a map element, I clearly indicate this.

It is my hope that the reader doesn’t interpret this editing process as a deliberate silencing of the voice of the participants – nothing could be further from the truth. I have tried to select those parts of the quotes that are most representational of the phenomena we were discussing. I view this selection and editing process of the quotes in the same way that Monmonier (1996) views the selection of symbols that the cartographer chooses to include in her map. It is a positive act of making important aspects more visible and being selective about which data I suppress in order to facilitate the ultimate goal of making meaning.

In terms of organisation of the data, I have adopted the following convention: I first indicate the element by assigning a number and a title e.g. Element 2:
Frame. I then group quotes that relate to that element under the title by participant i.e. all the quotes by Rani that relate to the element will be grouped together, all the quotes from Staci will be grouped together and so forth. In each case, I have ordered the participants from Rani through to Janelle. This facilitates easy comparison so that, when comparing responses of Janelle across various elements, for example, the reader can be assured that Janelle is the same person in each case.

In the interests of brevity and clarity, where different participants have repeated data, I have not included it in this thesis.

My approved ethics application prevents me from identifying individual participants. However, a very high-level overview of each participant may be of use:

Participant One (Rani) is a senior executive in charge of strategy at a large manufacturing concern. Rani also sits on external boards and has considerable power within her organisation and more broadly. Rani is frequently in discussions with government at all levels in regards to the drafting, development and enactment of policy.

Participant Two (Staci) is in charge of large infrastructure projects and is responsible for investments totalling many millions of dollars. Staci is often called upon to make significant decisions that impact organisational strategy.

Participant Three (Theresa) is a senior executive in a large service organisation. Responsible for a significant part of the business, she has considerable power to make and enact decisions within the organisation.

Participant Four (Janelle) is the director of strategy and planning in a large service organisation. With significant responsibilities that extend to developing and advising on government policy issues, Janelle occupies a powerful and influential role both within her organisation and more broadly.

All of the participants possess postgraduate qualifications at Master’s level.
This section summarises the participants’ responses to general queries I put to them about their general opinions and experiences with maps. These responses have helped me frame a response to research questions 1 and 2 which were:

1. Can cartographic conventions be used to help managers undertake strategy, and if so, how?
2. Can cartographic conventions help us to understand the strategic thinking processes of managers?

Findings – Part One

All of the participants who chose to answer a specific questions about their experiences with maps pointed to the fact that their experience is not that of an expert, but that it seems to reflect the everyday ordinariness of map-use (e.g. wayfinding, predicting the weather, or creating ‘treasure maps’ for small children). Ultimately, though, the participants eventually developed quite a sophisticated grasp of the elements of a map and were able to see how these elements corresponded to some of the elements of their strategic thinking.

In the first part of the data co-generation phases, I asked the participants for their general responses to what they think a map was, what maps do, the kinds of maps that they had experience with and whether or not they thought of themselves as expert users.

**Rani, Staci** and **Theresa** all pointed towards maps being useful as navigation devices, but each of them identified different aspects of how the maps were useful for getting them “from point A to point B”.

**Rani** spoke of common maps that she uses in her day-to-day life, but also spoke quite excitedly about how she uses maps to play with her daughter and create ‘games’ akin to a treasure hunt.

What is interesting about this exchange is that **Rani** seemed to become clearly excited at the idea that her daughter was able to undertake this kind of activity without too much trouble. I was particularly interested in the mechanism
that the participant used in order to help develop her daughter’s spatial awareness. The use of a rudimentary map of a familiar environment used as part of a ‘game’ wherein the child was required to visualise the position of the final object in three-dimensional space clearly builds on the child’s own knowledge of what already exists (their experience of the house as a spatial entity) and the abstract (the potential location of the object). In order for the child to find the object, she has to follow a pre-determined path, presumably encountering new experiences from which the child gains new insights about the nature of the house she lives in, but also improves her ability to visualise the location of objects she can’t see. For me, this is an example of how the epistemic culture of mapping gets passed on from generation to generation. Indeed, in an empirical study by Blaut et al. (2003), it is hypothesised that ‘preschool children in a number of cultures can, without training, read some kinds of map-like models and simulate map use. It seems likely that children everywhere, perhaps by their fourth birthday, can deal with map-like models’ (p.177).

Staci took a very literal position, explaining her relationships with maps as being devices to help her move her physical body from one point to another. She noticed that the form of the maps that she has been using has changed over time, mentioning the development of GPS/GIS maps but that the purpose that she puts the maps to hadn’t changed. Staci didn’t seem to dwell much on the ability for the map to be a communication device or a knowledge-making device.

Theresa, however, had a more sophisticated understanding of the ability of maps to communicate information. Referring to her own praxis of using visualisation techniques (drawing ‘maps’) to aid discussion and decision-making within her teams, Theresa almost anticipated some of the mapping elements we were to explore in later discussions (e.g. Frame, Selection, Date).

Each of the participants indicated various levels of expertise with maps; they took maps to mean and do different things. Over the course of our data co-generation phases, we explored the various elements of maps (explained in the
Rani said the following:

**RANI:** Yes, all those. Yes. I use all of those, particularly climate maps because there has been a drought for 12, 11 years and I own a farm. So, fortunately, it's wet now so my addiction to the weather has – it was a very stressful time being a farmer. Yes. Other than that, yes. It’s just the emergence of the GPS and some of the spatial stuff that we would use to describe [organisation name] and where it is. But it’s...So I don’t think there’s anything fascinating about how we use maps. I use them like most other people in society. [1/1b/41-95] [EFL]

Staci said the following:

**STACI:** I know a bit about maps. My understanding is pretty basic and it is based on getting from Place A to B. So not understanding about altitude or valleys or dips. It’s nautical maps, really roadmaps that back in the day, pre-Google maps or pre-GPS, you know, we used to use maps to get from one place to another. So that’s pretty much my experience with maps. Travelling overseas for road trips, using maps to navigate from Place A to B. [2/2/22-32] [EFL]

Theresa said the following:

**THERESA:** So I guess that's just an example of trying to draw seemingly unrelated issues together and making them related, and having a framework that you can then use to have discussions with people, because if you can't get it down onto something visual I find people really struggle to know what you're talking about.” [3/1/244-248]
...the map...it's a good point, these maps...and I do, I just brought that along as an example, but I draw these things up in about 10 minutes, I've got oodles of them and so they're not well thought through and there will be bits wrong with them and bits missing and they provide a useful way in getting this muddle of stuff that's going on in here down onto something that I can then do something with and talk to people about, so they are, they are incomplete. You know, maybe they'd be better if they had a bit more of that stuff factored into them.” [3/1/289-295]

...and this diagram I put together within four weeks of having joined the organization and it's now just, you know, you could just almost exactly use this diagram to describe the model that is now in place for one of the key parts of the areas that I, that I manage..." [3/1/185-188]

...yeah, well I guess a map for me is something that describes what is in relationship to each other to help you navigate your way forward. Um and so it's a bit more sophisticated than what I do um, gives you, you know, well I guess you could get...can have a mud map which is less sophisticated, but they're really, they're saying here's what it is and then that'd be saying, is usually saying here's what it...here are the facts if you like you know there’s a mountain here, there's a town there, there's this here, there's that there to help you identify those facts employed together whereas the drawings that I do aren't necessarily the facts, its sometimes ideas, they're concepts, they're frameworks, they're thoughts um where I think it is relevant to the map is that the design to help us get somewhere, in terms of the direction that we're heading in, or the next
steps or whatever, so they have that directional thing in common with a map.” [3/1/543-554]

And finally, this:

**THERESA:** Yeah, and I find I often use...resort to the Textas [felt-tip markers] when things are overwhelming – either overwhelming for someone else or overwhelming for me. So the most recent drawing I did was when one of my senior managers was talking to me about the various responsibilities they were trying to manage and I thought to myself, ‘I wonder if there’s a connection between these, and part of the problem is we’re only talking about parts rather than talking about the whole.’ And I was feeling confused, so I thought, ‘I wonder if it'll help if we do try and capture this as a whole and how they relate to each other.’ So I got a piece of paper out and I started with one of the things that I was talking about. So I said, “Tell me what would it be like if we were doing that bit well?” So we wrote a few things down and then the next bit. And in fact, I’d drawn them in the wrong order. Once we saw them together like that, we went, “Well actually, you’ve got to do that bit first,” so we just did a little arrow to show that we’d actually flipped that around...And then another person came into the room who was from a project area and we had been having trouble about this piece of work with that area, and I said, “Blah blah blah,” and they said, “Oh this is great. Can I have a copy of this, ‘cause it'll help us understand what we’re doing?” And then that also helped the senior manager get some resources, ‘cause they only had resources for one component and she wanted resources for other components and people were feeling confused, ‘cause, “We’ve already given you that,” ‘cause
it’s in our names...And we said, “Well actually what we’re
talking about is this whole thing (which has a name now –
we gave it a name on the piece of paper), and the bit that’s
got money is a subset of that, and if we only do that, we’re
missing these other bits,” it was like, “Oh great, no worries.”
And they were saying, “We’ll get you the money, no
worries.” And all of a sudden everything freed up. And then,
in terms of the authorising environment, the senior
manager’s going to use that to then put up a piece to our
Project Governance group to explain that concept at that
level. So...I don’t know...what was the? Simplification. So
sometimes the purpose of a diagram is really useful when
things feel overwhelming or confused, or there’s similarities
between things but you can’t easily...you might not yet even
realise it or you don’t understand it, so putting it together
helps people with that. And it does tend to have the effect
of simplifying, even if it’s not...it’s simplifying the
understanding of something, rather than necessarily it
being simple.

JASON: Yeah. How do you know...when you go through that
process of simplification...How do you know...? How do you
make that judgement that it’s simple enough but not too
simple? The right kind of simpleness?

THERESA: Hmmm. So I guess in this instance, did it help people have
the level of understanding they needed? Did it help people
to diffuse confusion that they had? Um...did it tell the whole
picture, i.e. could any people of detail relevant to the story
relate to something on the page? You know, so there’s
nothing...you know, it’s not like, “Oh but then there’s this
other thing.” “Oh, is that in the way of one of these things?”
“No”. “Well then you haven’t got it right.” Or, “Yes it does. It
fits in with that box.”
(3/3/1120-1178) [EFL]
Discussion – Part One

One of the things I noticed while conducting this research was that when I mentioned how my project involved maps, most people reacted in a remarkably similar way: they talked about how they love maps – I lost track of the number of times I heard: “Oh, I LOVE maps; I could look at them for hours”. Yet despite people claiming to love maps, it seems that when faced with learning to understand why (not how) a map works, people become shy. I know that in my own practice, as I explored the intersection between cartography and strategic thinking, I found drawing (strategic) maps to be a time-consuming and difficult process – especially if I wanted the maps to ‘look any good’. However, I came to realise that the artistic result is in most cases irrelevant; it is in the deliberate practice of selecting what to represent, and being clear as to the reasons why, that the value is found.

Throughout this research, I practiced drawing maps. Initially, they were various iterations of concept maps (Novak & Cañas 2008), systems diagrams (Senge 1990) or mindmaps (Buzan & Buzan 1993) as these were the kinds of diagrams that I was most familiar with. My own maps underwent a series of iterations and revisions — a process that I wasn’t very used to — and it took me a long time to realise that the value was found not in the end product (although the final maps are often useful), but in the processes that I undertook prior to drawing. The participants in the study, however, reported that it was also the act of drawing that was at times valuable to them – particularly when this process was carried out with others in a collaborative setting, whether that be at a whiteboard or on paper. I contend that the drawing — the artefact, the map — is only the final product of a complex set of cognitive functions and cooperative interactions. The participants often explained that the act of drawing was accompanied by a verbal discussion in which ideas are proposed, and in some cases challenged, and it is the process of ‘working through the drawing’ that helps people to understand. Evidence of this can be found in the quote from Theresa, above.
Staci and Theresa showed the most readiness to convert their thinking to a physical drawing — to actually attempt to map — and this formed part of their natural processes. They used various diagrams and graphs to help get across their understanding of an issue or a strategic direction whilst maintaining that they weren’t actually mapping. I feel that this is more due to the fact that they were still thinking about maps as physical objects, that their experience of what a map is (based on their past experiences) meant that the diagrams that they were relying on didn’t immediately look like the maps they were used to, and therefore they disregarded them as being maps.

The following exchange illustrates this point. In it, Theresa seems unwilling to agree that the drawings that she had made were maps, and sought my opinion. We had been discussing some of the elements of a map for quite some time and as many of the terms were ‘new’ to her, she seemed keen to bring the discussion back to her experience. At this particular point in the interview, we were discussing map symbols and she was gently challenging the validity of the idea of maps as an epistemic technology. After we examined one of the drawings that she brought along, however, she agreed that there were map-like elements within it:

**JASON:** Lots of different symbols get employed. In this instance it seems to be round circles for towns and dots for roads and squiggly lines for road and…these things presumably are mountains. So is there…when you’re doing your…when you’re doing your diagrams, are there some common symbols that you tend to use? Do you have your own kind of visual language?

**THERESA:** Hmmm. I don’t think I use many symbols. I’m trying to think if I do. I don’t think I do use symbols really. I mean, the only time I might do that is if I’m referencing an organisational symbol like the symbol about corporate goals or something. I mean, I might use simple things like an arrow upwards means an increase, an arrow down means a decrease, but
really I’m not using a lot of symbols in those...you know, if I think about this drawing here, um, which I’m trying to explain. The group were getting overwhelmed with everything that had to be done, so I was trying to help them to think about how they might break up the components and 100% of what we’re trying to achieve is down here. So in fact, these were meant to be...I said to them, “Think of these like thermometers...and when it’s full, that’s 100%, but you...you each might progress different percentages along the thermometer in your first phase. So this hatching here is phase one, phase two etc. and they each have timelines on them, so each colour represents a year of progress that we expect to see.” By the way, this was not a collaborative map in the sense that...I didn’t design this on my own as purely instructional. I could see that they were struggling with an urgent task that they had, so I was using this to...I photocopied it and we just used it as a ‘develop a common understanding’ vehicle, rather than a ‘develop the model together’. And, um...so you can see here, this is a progress towards 100%, there’s some commonality in this, but I was trying to explain that some people in stage one might progress less towards the target than other and that that’s okay...And then there was this criteria for how to think about what goes into phase one, you know, the things that it’s easy to achieve, you’re not too reliant on third parties which means it’s too much out of your control. It’s not too complex, not unduly risky, it does give you a tangible progress towards those targets, though, so it’s not a kind of waste of effort. Um. And it’s not...when you look at that together, there’s not incompatibility. You’re not doing something here that’s dependent on something that’s not going to be done in time...And so on one page, something
that was all...and there was a different person responsible for each stream too...So that helped them and then they were able to present to the Board, put together what they were going to put into phase one and that then contributed towards a business case...and the business case then led to money being allocated by the Board to get on with phase one. Whereas they were stuck and weren’t even able to articulate it and we had not long before the Board meeting so...you know, it was a...a tool for breaking through understanding. But I don’t think there’s a lot of symbols on that. Would you agree?

**JASON:** Well let’s...let’s ...

**THERESA:** You know, it’s not a map in that same sense, is it?

**JASON:** Well let’s look at that for example. So...each of the phases is distinct from any of the other phases.

**THERESA:** Yes.

**JASON:** Each of the streams has a label.

**THERESA:** Yes.

**JASON:** And each of those are unique.

**THERESA:** Yes.

**JASON:** They’re all bounded.

**THERESA:** Yes. There’s ...

**THERESA:** You can’t tell which one’s more important than the other, either, like those dots.

**JASON:** Yeah.

**THERESA:** Some of these might have different levels of importance but there’s no way of telling that.

**JASON:** Yeah.

**JASON:** I mean, there’s a scale.

**THERESA:** Yeah.

**JASON:** There’s, you know, timelines associated with this. There’s symbols...you know, a label’s as much a symbol as a round
dot or something like that. You’ve employed different colour and not only different colour but different hatchings, so …

**THERESA:** It’s highly skilled, isn’t it?! [Laughing]

**JASON:** It is! [Laughing] It’s a complex piece of work! Because if you think about...From my perspective, if you think about what it was that you had today. You had to find a way to be able to take something that was really complex…

**THERESA:** Yeah, and I only had a short amount of time. Literally, this would have taken five or ten minutes, I reckon. I’m just trying to think whether I...whether I ran an earlier version by someone and then this was the final version. It’s possible. I can’t quite remember now. I might have talked it through with someone and they were getting it and I thought I’d write it down. ‘Cause I think that doing it at night (I say night, you know, in the late afternoon at work), for a meeting that was at 8 o’clock the next morning with this group. ‘Cause otherwise it would have been my verbal direction to them. And I thought, ‘No, I need something that’s going to help more.’

**JASON:** Uh-huh. So there’s…

**THERESA:** I should have brought more of these along. I didn’t.

If we look to the work by Kalantzis, Cope and The Learning By Design Project Group (2005), this is an example of the participant understanding the cartographic concepts and then applying them in a creative manner — in this case to produce a diagram that was used to help her team understand a particular point. Note carefully the way that Theresa takes up the discussion about halfway through the exchange. In the first half, I am driving the exchange, pointing out to her that the diagram in front of us actually exhibits elements of a map. Then about halfway through, Theresa seizes control of the discussion and continues to run with it:
THERESA: You can’t tell which one’s more important than the other, either, like those dots.

JASON: Yeah.

THERESA: Some of these might have different levels of importance but there’s no way of telling that.

(3/3/678-682)

Here, Theresa is specifically referring to the manner in which symbols have the effect of concealing individual characteristics of the things that they represent and applying that to her own drawing. When interrogated closely, the map is found wanting. Clearly, relative levels of importance were something that she wished to convey, yet in the final drawing, this was not emphasised. The choice of symbols that she used hid this element.

Summary

The ways in which each of the participants related their work to the elements of the maps was idiosyncratic, yet each was able to make the connections between their own day-to-day praxis and the mapping elements.

This was important to recognise because it provided evidence that there was a link between the cartographic elements identified in the literature and the embodied practices of these strategists. The ways in which the participants used maps also indicated that they all had a basic understanding of how maps could be employed, and this meant that when it came to the data co-generation phases that specifically looked at the elements of the maps and the cartographic conventions that underpin them, that the participants weren’t totally naïve. What this discussion did show, however, was that the participants hadn’t considered maps and mapping to be a part of their formal strategy-making praxis.

There were different levels of conceptualisation and understanding of the mapping elements, and Staci and Theresa stood out as ‘novice-mappers’, as
they utilised diagrams in a map-like manner to achieve very similar knowledge-
creation and dissemination ends.
Part Two – Data relating to the individual elements of maps

The following sections contain the data co-generated with the participants that relate to the individual elements of maps. I also discuss each of these findings in turn, linking the participants’ strategy-making with the mapping elements identified in the literature. As discussed in my methodology and literature review chapters, I was able to identify a number of common mapping elements (or what Knorr Cetina (1999) would term ‘epistemic machineries’) that form individual parts and that when combined in various ways can create an epistemic technology of mapping. It was important to identify these elements if I was to answer the first two of my research questions:

1. Can cartographic conventions be used to help managers undertake strategy, and if so, how?
2. Can cartographic conventions help us to understand the strategic thinking processes of managers?

The data co-generation phases were designed to investigate the participants’ strategic thinking praxis and to also investigate whether the mapping elements and cartographic conventions identified in the literature were applicable. Consequently, a significant amount of time was spent investigating these elements, and ultimately, the presence of these elements allowed me to theorise a framework to aid managers who are undertaking strategic thinking, thus helping to answer my third research question:

3. Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?

There are eleven identified elements and these will be discussed in turn. The following table summarises the elements of maps:
## Elements of a map

[adapted from Monmonier (1996) and MacEachren (1995)]

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PURPOSE OF ELEMENT</th>
<th>EFFECT OF ELEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Alerting the map-reader to what the map is about.</td>
<td>Directing attention to the stated purpose of the map.</td>
</tr>
<tr>
<td>Frame</td>
<td>The border of the map (the edge).</td>
<td>Everything that is not within the frame is ‘off the map’ both literally and metaphorically. This can lead to things that should be considered being ignored or forgotten.</td>
</tr>
<tr>
<td>Date</td>
<td>To alert the reader of when the map was produced.</td>
<td>Maps can ‘date’ quickly – especially if that which is being mapped is dynamic and the data from which it is drawn is infrequently published/generated.</td>
</tr>
<tr>
<td>Symbols</td>
<td>By describing and differentiating features and places, map symbols serve as graphic code for sorting and retrieving data in a two-dimensional geographic framework.</td>
<td>Maps need symbols to portray (geographic) differences.</td>
</tr>
<tr>
<td>Selection</td>
<td>Selection is a positive term that implies the suppression, or non-selection, of most features. Ideally the map author approaches selection with goals to be satisfied by a well-chosen subset of all possible features that might be mapped and by map symbols chosen to distinguish unlike features and provide a sense of graphic hierarchy.</td>
<td>The author chooses what is in the map. Not everything is shown, and not everything that is show is equally important. The reader has to live with those choices.</td>
</tr>
<tr>
<td>Scale</td>
<td>Most maps are smaller than the reality they represent and map scales tell us how much smaller.</td>
<td>As scale gets larger, detail gets finer. This has an impact on what can be practically shown at any given scale.</td>
</tr>
<tr>
<td>Projections</td>
<td>Map projections, which transform the curved, three-dimensional plane, can greatly distort map scale.</td>
<td>Different projections have different impacts on the way in which the mapped area is portrayed. Sometimes it stretches this way; sometimes, that.</td>
</tr>
<tr>
<td>Simplification</td>
<td>Reduces the detail (especially if excess data was captured).</td>
<td>Requires a reduction in the total number of pieces of data that are considered. Too much simplification means that the map is more distorted.</td>
</tr>
<tr>
<td>Displacement</td>
<td>Avoids graphic interference by shifting apart features that otherwise would overlap or coalesce.</td>
<td>Allows individual elements of the map to be more easily identified. This may have the impact of making those elements seem more important that they actually are, or not having proper regard to their true nature.</td>
</tr>
<tr>
<td>Smoothing</td>
<td>Diminishes detail and angularity, might displace some points and add others to the list.</td>
<td>A prime objective of smoothing is to avoid a series of abruptly joined straight line segments.</td>
</tr>
<tr>
<td>Enhancement</td>
<td>Adds detail to give map symbols a more realistic appearance.</td>
<td>Enhanced map symbols are more readily interpreted as well as more aesthetic.</td>
</tr>
</tbody>
</table>
Findings – Element One: Title

In the following quote, Rani was referring to various market segmentation categories that operate in her industry, and using title categories to draw attention to different aspects of the conversation. She was effectively using the titles (categories) to say, “Look at this, not that”. Rani said the following:

**RANI:** If you distil it down, you basically say, you’re looking at 5-6% compound growth dairy consumption. Probably one of the most attractive sectors in the world to be in. In fact, if you look at a company like [key competitor], they forecast that dairy consumption – dairy food consumption – will grow at double the rate of the next category. So the next category...the next two categories combined, they’re not forecasting as much growth as in dairy. So the next two categories are pastries and...and, um, breads...and frozen, frozen convenience. [1/4/267-272] [EFL]

Staci was very clear about the role of titles as being a mechanism for ensuring that analysis was constrained to a particular aspect. Reinforcing what Rani (above) said, she also appeared to be saying, “Look at this, not that”. Within a broader discussion about which parts of a large project were to be excised as part of a cost-cutting regime implemented by a new top management team, Staci said the following:

**STACI:** So in terms of the frame, that’s the frame. There are a number of titles. So you could have a title for scope. And you can have a title for systems and they’re different maps. They’re different maps, if I relate that to maps. So I have a map that says ‘This is my scope’, I’ll have a map that says, ‘This is what the systems look like’. [2/3/294-302] [EFL]

Janelle explains that the title is important not only as a signalling device to others, but also as a self-checking mechanism. A careful selection of the title allows the strategic thinker to remain focused and enables the thinker to check that the mechanism of analysis is suitable for the desired endpoint. The title is
also important for explaining what might not be immediately obvious from the analysis. Finally, it helps people remain focused on a particular aspect and can be used as a means of ensuring that any analysis or interpretation that is undertaken is done so from a particular position. Janelle said the following:

JANELLE: ...but the heading’s important because I can paint a story that explains that when you break down overnight visitor spend in Victoria, we have a lovely bar chart, so it’s not a map...[4/3/124-126]

JANELLE: Then you have another bar chart that says, ‘Approximately one third of expenditure comes from each of those groups.’ [4/3/134-136]

JANELLE: And then we’ve got another diagram I put in front of people – but it’s more of a graph – that shows, again that’s the heading. Um...all about visitor spend and dispersal, and makes the point that most visitors (international visitors, in fact) visit capital cities. And, uh, the further away from a capital city, therefore including Melbourne, the less they go out and the less they stay overnight. So you paint quite a grim picture for regional Victoria, and particularly areas beyond two hours’ drive from a capital city. But you just made me think about the issue of the title. And for a long while, that was where our, I guess, focus and concerns were. But I got people about eighteen months ago, to give me the story in terms of total tourism spend, which includes day trip visitors. And people said, “Oh, that’s not how we measure it.” And I said, “It’s still an economic benefit.” If you’re in Healesville, running a caf or a restaurant, you don’t really care whether people stay that night. Now you don’t really care whether they’re from Germany or England. Uh...so when we had the title that said – and I did this one year and said, “Now you’re all familiar with the sort of
figures I just outlined,” and then said, “Now I’m going to paint the total tourism picture, which includes day trip visitors,” and the picture for regional Victoria becomes much better. [4/3/140-166] [EFL]

JANELLE: So it’s a long-winded way of saying yes, we do a lot of data analysis that drives strategy, and the title is important and you’ve got to kind of slow down a bit and make sure you’re clear about what you’re measuring. [4/3/177-180]

JANELLE: So in a sense, the title and purpose of what you’re measuring’s critical. [4/3/220-221]

JASON: So do you use the title, do you use that then as a way when you’re talking with other people inside your department or, you know, you’re trying to...trying to articulate a strategy – do you use that as a tool to do that? To keep people on track, I guess.

JANELLE: Uh, yes. Yeah, it’s critical. And again, particularly when I think about discussions amongst our [organisation name] Board, but then any group of ten or twelve people, yeah, now and then I think the conversation goes off on a tangent because either the person speaking or the audience have sort of jumped topics and they don’t even know they’ve done it. [4/3/225-229] [EFL]
Discussion – Element One: Title

The title of the map serves to alert the map-reader to what the map is about. As obvious as that sounds, it is an important part of the map, for as Wood and Fels (2008) state, the title is part of the perimap, that part of the map that extends beyond the map to help explain it. Wood and Fels derive their analogous term ‘perimap’ from Gerard Genette’s concept of a paratext (of which a peritext is a part):

‘A paratextual element, at least if it consists of a message that has taken a material form, necessarily has a location that can be situated in relation to the location of the text itself: around the text and either within the same volume or at a more respectful (or more prudent) distance. Within the same volume are such elements as the title or the preface and sometimes elements inserted into the interstices of the text, such as chapter titles or certain notes. I will give the name peritext to this first spatial category…’ [Emphasis in original] (Genette 1997, pp.4-5)

Wood and Fels (2008) extend this slightly, but the intention is clear, the peritext (or in the case of maps, the perimap) exists apart from the map itself, but is important in helping a reader to understand the main text:

‘The peritext consists of all the verbal and other productions that surround and extend the text in order to present it: the quality of the paper, the quality of the binding, the character of the type, that of the printing, the dust jacket copy, the series indication (if any), the author name (anonymous, pseudonymous, with titles, without, etc.), and the work’s title, together with whatever dedications, inscriptions, epigraphs, prefaces, forewords, intertitles, notes and illustrations there may be.’ [Emphasis in original] (Wood & Fels 2008, p.9).

In both instances above, the title is explicitly mentioned as part of the peritext/perimap – a device which helps the reader to understand the text.

Thus the title of the map plays an important role in directing attention to the stated purpose of the map, helping to stamp the map’s authority on the reader.

Rani was very careful to spell out the categories of her industry and the relative importance of each. Here she used the labelling of categories to draw attention to specific and relevant data. By providing names to the categories, she imposed an ordering structure on the data and was therefore able to
identify which data belonged to which category. Even though the category names (the titles) are quite broad, they are an effective mechanism for drawing attention to specific data and indicating how each should be considered. Rates of growth between categories are different and this is an important aspect that the participant wished to draw attention to. Whilst the data can be interrogated, it is the application of the title (the category name) as an ordering device and also as a signalling device that allows meaning to be made. Rani wanted to demonstrate that the differences between the categories were important enough to warrant their own title – effectively saying that each group of data needs to be examined in this way, not in that. The titles helped reinforce this message.

Staci was also very careful to use titles to draw attention to specific aspects of a project that she was working on. The project was undergoing a thorough review by the top management team, and it was likely that cuts to the project were going to be announced. The original project plans were going to change, and this had significant impacts on the wider business. In this instance, Staci used the title of a map to indicate which parts of a project will be excised from a larger project. The labelling of the individual parts of the project helped her to focus attention on the dimensions of the problem that needed solving – in the vignette above, this is represented by the scope of the project.

The title of the map becomes important as a mechanism through which to recognise the impact of another map element – scale – has on strategic thinking. As areas of the project are nested under each other and flow from higher-level decisions, the titles serve as a mechanism for orienting the thinking process about which part of the project is under consideration – the whole thing, or sub-sections (e.g. the geographic roll-out or the systems sections of the project).

A recurring theme through the work of Staci was the need to communicate to disparate teams of people, both technical experts and those with a non-technical background. Staci explained that having individual maps which explain the issue in discrete parts is important when dealing with team members
and trying to communicate in a clear and effective manner what is required, so as to minimise mistakes and ensure that project deadlines are met.

For Janelle, data has meaning, but she recognised that the data was probably opaque to the members of the independent Board and that it needed to be shown in another format – in this case, bar charts. Without the title of the charts to explain what it is that the audience is looking at, the relationships between international visitors and total spend might not be obvious. In this case, it is not only the title that is important in this exchange, but the presentation itself which becomes an important part of the peritext/perimap (Genette 1997; Wood & Fels 2008). The charts (title included) form part of a presentation of text designed to support the decision-making process of the Board.

Janelle’s professional experience is rooted in economic analysis and quantitative approaches to understanding phenomena; being clear about the kind of analysis that is being undertaken and the conclusions that can be drawn from it is crucial. The title plays an important role in helping her to define exactly what it is that is being analysed and maintaining focus. At the end of this exchange, Janelle recognises the importance of the title as a device to thinking, analysis and communication, but just as importantly, when pressed as to any other use that the title may have, she admits that it is a useful mechanism for keeping other people’s attention on the task at hand.

The title plays two roles simultaneously. It acts as an ordering device, being the first filter through which the data of the map is considered. Data of a kind that relates to the title of the map is included on the map, and that which is not relevant is potentially left off. If other data is included on the map that is not specifically related to the title, that data is relegated to a secondary role. Each of the participants seems to use the title in this manner. Secondly, the title draws the attention of the reader to the purpose of the map.

The choice of the paratextual elements on a map (and particularly the title) demands the reader’s attention about an aspect of the map that the author wishes them to pay attention to. In probably the most well-known of the cartographic controversies of the modern period, Arno Peters produced and
published a map of the world that showed an equal-area projection of the landmasses of the earth. In other words, the Peters Map (as it became known) attempted to show the actual relative size of land-masses according the physical amount of the globe that they occupied. This was in contrast to the conventional use of projection (e.g. the Mercator projection) which represented the area near the equator as the most equal-area and then as the projection moves towards the poles, stretches the representations of the landmasses in a north-south aspect.

‘In Peters’ case, the paramap attempts to keep us focused on the equal-area property of his map, to force us to compare it along this dimension to the unequal area Mercator, and to pretty much ignore everything else. His paramap immobilizes our perception on his chosen ground.’ [Emphasis in original.] (Wood & Fels 2008, p.12)

In effect, the title is saying, ‘Look at this, not that.’
Findings – Element Two: Frame

Rani mentioned a clear preference for the written word over diagrams. She continually pointed out that diagrams were limited in what they could convey, yet as part of the on-going discussion and reconceptualisation of the elements of the maps as epistemic machineries, she began to recognise that she, in fact, used these elements as they were intended. Rani said the following:

RANI: Because obviously you sort of know Europe. And because it didn’t have countries and it’s not in English, you’re just sort of saying, you know, I’m guessing where we are. Just orientating myself.

JASON: But in terms of the frame, it has this effect of focusing attention. And when you look at everything inside the frame, that becomes your focus of attention, rather than the stuff that’s outside. Even though the stuff over here will actually tell you all about this map...it’s probably really, really helpful.

RANI: Well it’s really the point I was making before, isn’t it? There’s...there’s usually a narrative and I think a book like this is a good metaphor for business because...um ...I n actual fact, if you looked at that, historically, not in English, without any context, there’s certain things you could...I could tell you it's an old map...Could probably have worked out it was Europe, with some basic knowledge. Um. And that's about it.

JASON: Yeah.

RANI: Whereas this will tell you an entire story. [Indicates thick document.]

JASON: Yeah. So, um, Dennis Wood talks about the, um, elements of a map that are often outside of the map and they’re called perimap and paramap. And they are used...
what you’re saying is that the map doesn’t exist in isolation. It exists in a wider environment…and there’s often things on the map or around the map that make it understandable. And it’s these things that are important.

RANI: Yep.

JASON: And often you don’t look.

RANI: Right.

JASON: And that’s what you’ve been saying.

RANI: Yeah. [1/2/526-562][EFL]

Rani’s conceptualisation of the frame is driven by personal experience. However, she also thinks that a frame is a useful device to impose upon others; it can both limit their thinking to only those aspects that are important and challenge them to expand their thinking to ensure that they have captured everything:

RANI: I’ve got people who report to me who are a bit older, very experienced, they’re probably done more in their lives in truth than I have, who report to me. But they’re new in the industry. So they’re still developing that, um, that sense of the map that is the [sector] industry, or the part of it that they work in. So you’ve got to probably keep…I think it’s an interesting metaphor that as you move, it’s like, as you move jobs and roles, you are actually redesigning a whole new conceptual map in your head. And then once you’ve done that, you just carry it around with you.

JASON: Yeah. So that’s interesting. Thinking about the second and third layer of management that you were talking about…if experience is so important, do you think that strategic thinking can be taught through the use of this sort of stuff? Do you think that we can make what’s often tacit and very, very personal experience that shapes your strategic thinking…how would you go about encouraging others –
your reports – to become more strategic in their thinking, if you like? Like do you think that’s possible or it’s really time on the planet?

**RANI:** I mean, anything’s possible. I think there’s always degrees to that. I mean, I’m a geneticist, sort of by trade, so I have a...a...I have a strong belief in...genetic-environment interaction. A lot of it’s programmed, a lot of it’s just skills you innately carry...genetically. Um. What do I try and do?...I think for people who...I think for people who aren’t innately like that, I think the best way to do it is to frame it for them. So to actually give them templates, if you like, to...to function within. Um, almost like the old writing up a science prac. Um, you'll remember it – “What's the objective?...What are our materials and methods? Here’s our results. Here’s our data, here’s our discussion. So...um, most people can’t do it like I do it...out of their heads, so I think you've got to frame it...and give them a discipline.

[R1/3/688-734] [EFL]

**Rani** spent quite some time reflecting on the role that the frame plays and how she believed that as she became more senior, her exposure to more information and data meant that she had to have a very large frame.

**JASON:** Yeah. Do you think that...you think at a...you know, your map is bigger than the other people’s, necessarily so because of the nature of the work that you do? People come to you...to take your example before, someone comes to you with a deal and they’re focused on the deal, but your frame of your map is a little bit larger than that. You’re considering that in relation to all the other deals that are going on and ...

**RANI:** Yeah, definitely, and as you get higher in companies it’s actually quite a...it’s actually an advantage. The higher you
are in a company, the better off you are in framing that map because you can see everything else that’s going on. [1/2/800-810]

Having such a large map can become unwieldy and I was curious as to how this participant handled all that detail:

**JASON:** Do you sacrifice detail?

**RANI:** Well, I think you sort of draw it back down as you...you start to formulate, you know, your path (to use the map metaphor). You say, “Right, I’m going to go this direction,” and then you come back into a lot of detail then. Yes. I don’t think you sacrifice detail in the end, but believe me, um, I’m positive that if you go and talk to Marius Kloppers or you pick all the best...Gail Kelly...and I know my mate who I work with here, they don’t have...the map is so huge...you can’t have detail in that. You’ve just got to rely on your experience, your intuition...um...and that kind of natural sense of the world...and then narrow that down to the company that you’re in... [1/2/920-936] [EFL]

**Staci** took a very literal perspective. She recognised that strategic thinking (and action) requires boundaries and that those boundaries need to be firmly established. For her, framing is akin to problem definition. **Staci** said the following:

**STACI:** What we’re doing is redefining the scope of the work that we do. So we claim to be very precise and drawing a boundary around what we’re doing or not doing. So it’s a bit like...this is what we originally going to do...in our project, in terms of I’ll call it scope. And very clearly defined in terms of geography, division, function, people...systems. We’re having to recut that so it means pretty much having to recut
which bit we are going to do. And drive...well what does that mean? That's what it used to be. This is the reloaded version. So everything else outside – carve it out, it's irrelevant – that is a focus, that's what we are achieving right now. That's what the scope of this is.

[2/3/265-284] [EFL]

Whilst recognising that the frame (or boundary) is an important construct, Theresa also wondered what lay beyond the boundaries. She noted that the frame can put a constraint on the usefulness of the map, and also that it is an artificial constraint which can be overcome by attaching abutting maps. This, in effect, increases the size of the overall map, enlarging the frame. Theresa said the following:

**THERESA:** Well I think that’s right, I think that’s what it does. You don't tend to go, “I wonder what’s here,” unless you’re on the way and you hit up against the boundary, and it doesn’t take you to the next...it doesn’t answer a clear question or something. So if this was a map or France or somewhere like that, and your task...you really wanted to get from part of France to part of Germany, it would be frustrating because it would only take you part of the way there and you would be looking to get another map to see the whole picture, the picture that you need for where you’re going.


**Janelle** used a very broad definition of frame in terms of the content that her ‘map’ included, but at the same time was very clear about the fact that the frame did not include other economic sectors. The frame helped put a boundary around that in which she (and her department) was interested. **Janelle** said the following:
JASON: How important is framing for you, in terms of the strategic thinking that you do, in order to be able to focus attention?

JANELLE: Again, uh, broadly speaking, I’d say that...um, our broad purpose is to increase the economic value of the tourism sector. And you can carve it up, map it, reasonably easy by saying there are three categories of people. There’s Victorians, there’s interstate Australians and there’s foreigners. And broadly speaking, what we have a debate about...so in a sense, that is the frame. There are no others. [4/3/258-269] [EFL]
Discussion – Element Two: Frame

The frame is the border of the map (i.e. the edge). Everything that is not within the frame is ‘off the map’, both figuratively and metaphorically. This can lead to things being ignored or forgotten.

We can trace the history of framing from the Middle Ages where the act of placing a frame around the edge of the map served a cosmological and also rational purpose:

“In the late Middle Ages the circular frame around a city was supposed to convey a symbolic meaning of cosmic perfection. At the beginning of the sixteenth century the circular frame is the limit imposed by the surveying instrument for the realization of a rational image of the city.’ (Nuti 1999, pp.92-93).

The border also helps to ‘...strengthen and focus the political meaning of the maps on which they appeared’ (Harley 2001c, p.73), whilst Cosgrove points to the fact that the frame acts as an epistemological organising device:

‘Framing is as fundamental as scale...in mapping, as in picturing, the frame can connect to quite distinct epistemologies in fulfilling its fundamental topological functions, not only of separating inside from outside, but also of producing and organizing unity and totality within the space so contained. As Jacob claims in the context of ancient Hellenistic map-makers: ‘one of the underlying dynamics of the Alexandrian culture is its attractive and magnetic power: collecting all the books ever written by the Greek world as well as the barbarians’. Framing is a territorializing, even imperializing, process, the map inescapably a classificatory device. Thus, as Alessandro Scafì points out, mapping a place such as Paradise which acts as both a boundary and a centre creates almost insoluble epistemological contradictions. And self-conscious acts of frame-breaking, such as seen on the Ptolemaic world map printed in Ulm in 1482 where Scandinavia and Thule extend beyond the northernmost latitude of the framed oecumene, are uncanny, signalling epistemological as much as aesthetic anxiety. Failure fully to frame a land mass, or of mapped territory fully to occupy the map’s bounding lines, as in seventeenth-century maps of Van Diemen’s Land, speak of failures of vision and knowledge of the uncertainty implied in the peripateia - the meandering linear progress whose trace may disappear into trackless space. “Blank” spaces within the frame also generate and reflect aesthetic and epistemological anxiety; they are thus the favoured space of cartouches, scales, keys and other technical, textual or decorative devices which thereby become active elements within the mapping process.’ (Cosgrove 1999, p.10)
As will be explained later in the section on Element Five: Selection, the choice about how large the frame is, and what goes inside it, is as much a political decision as it is a matter of cartographic convenience. The author of the map chooses the extent of the map – is it a map of a neighbourhood, a state, a nation, a hemisphere, or the globe? In placing a frame around the content of the map, everything outside of the frame is effectively excluded from consideration. That doesn’t mean that it cannot be considered, but it is harder to think about things when they are not visible – especially in the context of an author deliberately attempting to limit the scope of what is to be considered.

Of course, the frame acts in cohort with ‘scale’. Later I will explain how most map elements change with scale, and this should not be forgotten: a change in scale may mean that representations that fell outside the frame of the map are suddenly brought back inside it and, conversely, a change in scale may push things off the map, out of frame.

It should also be remembered that with all map elements, the frame is an artificial construction, a choice, a constraint that is applied to the map. On the inside front cover of Else/Where: Mapping (Abrams & Hall 2006), there is a wonderful image entitled ‘Blue’. Basically, a large, blue square showing a photograph of the Atlantic Ocean taken from altitude, this image depicts the ‘Atlantic Ocean, intersection of the Equator / Prime Meridian, south of Ghana and west of Gabon’. The image contained within the frame excludes everything except the ocean – if it was not for the paramap element of the title, it would be impossible to know where this photograph had been taken. Working together, the frame of the photograph/map and the title work to focus attention onto a very specific piece of the Atlantic Ocean, whilst at the same time excluding all else. Should the frame be extended, we might catch a glimpse of Ghana or Gabon (or both), to which the title refers.

In a lengthy discussion about this element, Rani explains how, for her, the frame is a way of understanding the context of a situation and also the context of a person’s thinking. This participant goes as far as to link the frame of reference directly to a person’s experience ‘in the world’. For her, the things that
were inside the frame were of critical importance and if someone was to come and look at their business or their industry from ‘outside’ the frame, they would not know where to draw the boundaries. This tight linking of experience and frame suggests that the frame is flexible and defined by the person drawing the map; it also suggests that others may have a different conception of how large or small the frame should be and what should be encompassed within it.

**Rani**’s conceptualisation of the frame is driven by personal experience, but she also thinks that a frame is a useful device to impose upon others; it can both limit their thinking to only those aspects that are important, and challenge them to expand their thinking to ensure that they have captured everything. Thus the frame becomes an important part of the thinking process. It acts as a barrier to separate out that from which is under consideration from that which is not. It also acts as a reminder that everything within the frame is connected to that outside of the frame (however distant) and is a mechanism for directing attention and ensuring that others are ‘on the same page’.

**Rani** really warmed to the concept of the frame and having a ‘larger map’ and recognised how important this was when thinking strategically. She reflected on this aspect for over 10 minutes and it was only because our allocated time for the interview was coming to a close that she stopped.

Early in this discussion, **Rani** links the ability to be able to ‘see more’ to her position within the organisation. She is a member of the executive team and is therefore exposed to a wider range of issues and data than a functional manager would be. This allows her to have a wider perspective on the issues that affect her organisation and, in her terms, allows her to have a ‘…big, rich, fluid map’.

The size of the map was a very important element for **Rani**, allowing her to be able to include more things in her mental map and therefore have more data to consider – as well as the ways in which that data is connected. She noted that the capacity of the thinker to be able to hold all of this information in her head is an important aspect, for the map can become very large. This exchange would seem to indicate that **Rani** operates with more than one map at a time,
initially using a very large framed map to capture a wide cross-section of data and then using smaller, more focused maps when making specific strategic decisions. She went on to say how having a wide exposure to lots of different types of information aids her in her strategic thinking and eventually suggested that whilst there may be some innate, genetic advantage that she enjoys as a strategic thinker, some of it can definitely be learnt.

**Staci**, on the other hand, seemed to take frame as having a very literal translation. For her, things were either in frame or out of frame – in scope or out of scope. Things that were out of scope were regarded as unimportant – in fact, they were literally regarded as being non-existent, having no meaning. The things that were outside of the frame may indicate, as Cosgrove (1999) indicates, epistemic anxieties. **Staci** literally doesn’t want to consider it: “So everything else outside – carve it out, it’s irrelevant”.

**Theresa** talked of how the frame helps to direct her attention and mentioned how, by the frame focusing her attention in a particular way, she stops wondering what is out of frame – until she comes to the edge. The frame here, then, serves two purposes. Firstly, everything that is excluded from the frame is suppressed – is not the subject of attention – and consequently its importance is rendered less, and secondly, the frame acts as a reminder that there is, in fact, more to the scene. The border reminds us that whatever the subject matter of the map, that it is part of a larger whole and that the border is an artificial constraint.

Where **Staci** saw the frame as an important tool to tightly define thinking and action, **Theresa** was much more willing to consider the frame of the map as not being an end of what is known, but an edge of what is known. It is almost as if she saw it as an invitation to explore further.

The choice of the extent of the frame is a useful way of focusing the attention of the map-reader on a specific area of interest. Nevertheless, the frame is an artificial constraint that exposes the author’s choices about what to include and what to exclude. No matter how carefully those choices are made, the frame exposes the truth of the map – there is more to see. For those who
believe that the frame represents the edge of the map and that everything within it is of importance and everything outside of it is not worth considering, the frame provides a challenge: What lies beyond the edges of the map? Is there anything? Nothing? What Theresa has highlighted here is that to be a critical reader of a map and also a critical thinker, that a map-user must also question that which is not shown on the map due to exclusion based on the choice of the map-maker. There is always more to see.

Finally, Janelle also touched on the idea of the frame defining the epistemological boundary of knowledge. By defining the frame as being the device within which knowledge that is deemed important or relevant is included and other knowledge is disregarded, the frame serves to constrain what is meant by strategic thinking – strategic thinking is about this, not that.

Whilst the title of the map helps to direct the attention of the map-reader (and also, for that matter, the map-maker) on the specific theme of the map, the frame acts as an epistemological boundary. Some of the participants thought that the frame is fixed, inviolable. Others seemed to regard the frame as being less a fixed thing and more something that can be manipulated (enlarged, reduced) or considered in terms of trying to determine what else exists outside of the frame. How the strategic thinker approaches the element of frame will likely have a significant impact on the way in which they undertake their thinking, including limiting what they think about or implicitly defining what they regard as being valuable knowledge worth consideration.
Findings – Element Three: Date

In relation to the changing nature of her business over time and how the fact that changes in the organisation have had an impact on the kinds of strategies that they can adopt, Rani said the following:

**JASON:** So the date’s important because it tells you the day which it was drawn, but also how old the data is …

**RANI:** Absolutely. I understand. I think it’s just…I think it’s just a point of obvious note, isn’t it?

**JASON:** Yep. So when you’re thinking about the history…when you think about the history – of the company – compared to where you’re going at the moment…is there a tension there with, you know? When you’re devising your strategies…are you saying, “Now this is where we are now…this date’s really important, but we’ve got to remember there’s some stuff back further,” or is it just about, “Right, you know …”

**RANI:** I think…Boston Consulting have written all over my Board but…you know, it’s…it’s kind of a…there is another…what was interesting with talking about supply chain, another conceptual map is a timeline. And in actual fact with this project, which is a project they’re doing for me, we mapped out the project as a timeline, so you know, the classic…you know, this was the First World War and this was the Second World War. So…what am I saying? These are junctures…in the timescale of…of your life, my life, the company’s life, the history of the world. So yes. Absolutely. If you put the map into…if you drew a map of [organisation name] circa 2011, and then you drew a map of it circa 2012, some features are the same but some are very different. [1/4/427-463] [EFL]
Taking a different perspective on date and highlighting how recency of data is paramount in allowing senior management to make informed decisions about their strategy, Staci said the following:

**STACI:** Date, yes. That's a good one. Dates. Everything is specific to or at this point in time. Based on what we know. Associated with that are all these assumptions.

**JASON:** But what you know comes from...can come from across a reasonable amount of time, can't it? Sorry, for example we were talking earlier about the senior exec team and they were saying, "Well this is how we did it ten years’ ago." You know, the data that they're drawing from, 'cause they're going out and doing all this stuff and then they're coming back in. That the data that they're drawing from's quite old. But it's still the data that they really want you to use. It's a point of reference. Do you keep going back to them, highlighting the fact that the date, the data, their point of reference is out of date?

**STACI:** No.

**JASON:** No?

**STACI:** No. That's something that's actually talking to them at the moment – the Project Director. And one of the Architects as well. It's an education process for them, 'cause they don't know...they don't know what's happening in this business from what we're doing and what it means and why. So it's an education process. [2/3/ 652–676] [EFL]

Even though some things change over time, it is important to recognise that some thing also remain stable. The fact that some things are unlikely to change is important in considering strategy. Theresa said the following:

**THERESA:** But some things stay the same, don't they? Like, you know, the boundaries of the place. You know, they're unlikely to
change much over time, assuming they’ve done a reasonable job of it. And even if it’s not perfect...you know, it’s probably good enough. So some things are...can stay the same and other things, you know, the data will vary and change. A new town comes into existence – well that’s got to go on the map. Or a town changes name because of political impact. [3/3/441-448]

The temporality of data is important to Janelle. In the first quote, she indicates how, over a short period of time, significant changes in her organisation’s strategic context can change. In the second quote, she highlights the importance of re-examining data to ensure that previous projections are still relevant. She talked about how important it was to account for changes over time. Janelle said the following:

JANELLE: So, we’ve had more than 20% growth per annum for the last three years in Chinese visitors. The key strategic issue that I pushed here is that they...are very different linguistically and culturally than the traditional Anglo-Saxon market we’ve had...[4/3/527-531]

JANELLE: Yeah, yeah. Again, earlier today, I think last week I talked about management challenges given resource cuts here, but said that – I said to the Board and others – that our projections of what things would look like are much the same as two years ago. Now we didn’t do that flippantly...We actually re-examined all the data. Because you’re right. In many areas of industry, but especially tourism, those things do change...Very significantly. And it’s not just economics, it’s social trends and technology. So...I mean, to put it simply, twenty years ago people often took two or three weeks’ leave and spent a week with their family. A week somewhere, in the Grampians or Mildura. Particularly in areas of country Victoria. Today for a whole
bunch of reasons, those holidays are very rare. In fact, because of cheaper airfares, better technology, better flights, people working longer hours, people being economically per capita much better off than twenty years ago, the advent of the internet, the ease of booking etc., when people take a week or two’s holiday it’s usually overseas. [4/3/971-991] [EFL]
Discussion – Element Three: Date

Sometimes maps will have dates published on them as part of their paramap. One function of the date provides a clue as to the historical context of the map (as finished product). However, the data that goes into the making of the map needs to be considered in terms of the date it was collected/produced. It is not just the spatial aspects of geography that gets mapped; time is also a key factor. Indeed, both dimensions of time and space are represented in any map. Ultimately, maps are created at a certain time and represent a description of the mapped object as at a specific time (and not always at the same time as the map was drawn). The fact that time gets represented as well as spatial data is important for managers to recognise when drawing their own maps/thinking about their own context. Strategic thinking is an act that occurs both at a time and also is about time. Strategic thinking is future thinking and as such any mapping of the future will need to incorporate this idea of time.

For example, if census data is used to produce maps of demographic trends, there is the consideration of when the data was actually collected, how long it has been between collection and publication, and any changes that may have occurred in the meantime. This is particularly important when considering historical data/maps. The quality of the data is partly a function of the historical moment within which it was captured and interpreted and is also something else that needs to be considered. Survey methods generally have improved with time and a concern with accuracy has certainly dominated the modernist cartographic movement since the 1950s. This concern for accuracy is important not only in terms of the integrity of the data itself, but also in terms of understanding the social order of the time:

‘The framework of definite historical circumstances and conditions produces a map that is inescapably a social and cultural document. Every map is linked to the social order of a particular period and place. Every map is cultural because it manifests intellectual process defined as artistic or scientific as they work to produce a distinctive type of knowledge.’ (Harley 2001e, p.44)
Maps are like milk: their information is perishable, and it is wise to check the date. But even when the map author provides one, the date might reflect the time of publication, not the time for which the information was gathered. And when the map was compiled from more than one source or through a long, tedious field survey, the information itself might be so temporally variable as to require not a single date but a range of dates’ (Monmonier 1996, p.54).

Understanding the impact that the date can have in regards to a map is crucial, particularly so when data is time-sensitive or if data analysis is required to extract trends. Examples of this can be seen in most census maps where changes over time are important as markers for potential shifts in, say, demographic trends. Thus the date of a map operates on three levels:

1. The recency of the data that is used to construct the map. How recent is the data? How important is it that the data be recent? Is the map being used to highlight a historical aspect?
2. The temporality of the data. Is the map trying to show trends over time, or a snapshot in a particular period of time? Has the data been captured over a long period?
3. The historical context within which the map is made, including the methods, social structures and conventions of map making within that context – are the conventions with which a modern map-reader uses to interpret a map that was constructed in a different historical context appropriate?

‘In our own Western culture, at least since the Enlightenment, cartography has been defined as a factual science. The premise is that a map should offer a transparent window on the world. A good map is an accurate map. Where a map fails to deal with reality adequately on a factual scale, it gets a black mark. Maps are ranked according to their correspondence with topological truth. Inaccuracy, we are told, is a cartographic crime.’ (Harley 2001c, p.35)

If we are to interpret the data of maps without regard to the historical context within which they were made, and therefore using appropriate interpretive techniques, it is possible that a map will be misinterpreted.
While the above quote sets up a discussion on analysing old maps, where old is roughly defined as pre-Enlightenment, even in modern times it may be important to consider significant shifts in such things as technology as having an impact on the way in which a map-maker might interpret data and therefore construct a map.

All of the participants were clear about how important the date is in their thinking. Rani highlighted the fact that her organisation had changed over time, whilst Staci was deeply concerned with the date of data as being as recent as possible, since it gave a clear indication of what was happening right now and therefore allowed senior management to make informed decisions. Theresa pointed out the fact that some things change at different rates and that over an extended period of time the rate of change for some things is quite slow – maybe the date isn’t so important in these cases. Janelle focused in on the temporal aspects of date and how it is important not to assume that projections made from one set of data will remain the same over time, and that it is important that the data be re-interrogated to account for any changes that may be related to when the data was collected: “Now we didn’t do that flippantly...we actually re-examined all the data.” [4/3/975-977]

With each of the participants picking up on different indicative and diagnostic aspects of the element ‘date’ it shows how the epistemic element can be interpreted in different ways and then put to different uses. It is evident in their thinking praxis, yet contextual, depending on what they are thinking about. In some of the instances above the participants were concerned with the rate of change that was occurring in their strategic environment over a period of time, whilst others were concerned with how the element of date can be a trigger for understanding larger societal shifts. Understanding and interrogating the temporal aspects of these larger shifts can be seen as a mechanism for encouraging the Strategy-As-Practice practitioner to link their analysis and therefore their practice to the larger ‘practice complexes’ to which Chia and MacKay (2007) refer and claim is missing in the work of Strategy-As-Practice practitioners.
Findings – Element Four: Symbols

The power of symbols to represent something was not lost on Rani, but she relegates the idea of symbols as being important only to external branding or to high-level metaphorical thinking. Rani said the following:

RANI: Yeah, that’s a good question. Um. Maybe symbols are something that...we don’t utilise maybe as much as we should. You know, I could have drawn the supply chain in symbols, couldn’t I? Um. Symbols are quite easily applied to a lot of things in strategy. Um. [PAUSE] But in a business, probably tend to have very little use of symbols. You probably tend to use more words and numbers and, uh, symbolism comes more into play probably in high-level cogs...external cogs, marketing, branding...corporate identity. Um. But in a day-to-day business process, in my business anyway, we have very, very little use of symbols. [1/3/793-810] [EFL]

Staci, on the other hand, uses symbols as a very deliberate method for ensuring teams understand each other:

STACI: To say, “I want this in. So that’s in and that’s out.” That’s a deliberate choice, definitely, right? Symbols...it depends on which map you use. Some maps do, some don’t. So for example, if it’s a...if it’s a plan with timeline...or milestones, you know, we’ll do ‘pick a milestone’ as that. Now it may mean different things for different team...from a functional team versus a typical team. But someone looking at that will say, “Ah, that’s a milestone.” So we use that all the time. [2/3/601-605] [EFL]
Often the participants would argue that they didn’t use symbols, but when they stopped to think about it, it became clear to them that they did – particularly as a mechanism for helping to explain difficult or complex issues. Theresa said the following:

**THERESA:**

Hmmm. I don’t think I use many symbols. I’m trying to think if I do. I don’t think I do use symbols really. I mean, the only time I might do that is if I’m referencing an organisational symbol like the symbol about corporate goals or something. I mean, I might use simple things like an arrow upwards means an increase, an arrow down means a decrease, but really I’m not using a lot of symbols in those...you know, if I think about this drawing here, um, which I’m trying to explain. The group were getting overwhelmed with everything that had to be done, so I was trying to help them to think about how they might break up the components and 100% of what we’re trying to achieve is down here. So in fact, these were meant to be...I said to them, “Think of these like thermometers...and when it’s full, that’s 100%, but you...you each might progress different percentages along the thermometer in your first phase. So this hatching here is phase one, phase two etc. and they each have timelines on them, so each colour represents a year of progress that we expect to see.” By the way, this was not a collaborative map in the sense that...I didn’t design this on my own as purely instructional. I could see that they were struggling with an urgent task that they had, so I was using this to...I photocopied it and we just used it as a ‘develop a common understanding’ vehicle, rather than a ‘develop the model together’. And, um...so you can see here, this is a progress towards 100%, there’s some commonality in this, but I was trying to explain that some people in stage one
might progress less towards the target than other and that that's okay. [3/3/590-622] [EFL]

Janelle understood the use of symbols as a mechanism for not getting bogged down into specific data – symbols allowed her to think more broadly about issues, particularly when it came to setting policy or working within a policy framework. She said the following:

JASON: ...How much do you...do you do that in your own thinking? How much do you apply symbols as a, kind of, I guess, as a shorthand...in order to be able to make very large, complex...’cause they’re the kinds of issues that you’re dealing with...issues more manageable?

JANELLE: I think the answer is a lot, uh, particularly if you’re trying to drive higher-level policy. Um. I think in industry policy generally and tourism policy, you’ve got to be careful not to be distracted by the specific issue. [4/3/812-824] [EFL]
Discussion – Element Four: Symbols

‘By describing and differentiating features and places, map symbols serve as graphic code for sorting and retrieving data in a two-dimensional geographic framework’ (Monmonier 1996, p.18). An example may be useful here. Imagine a road map laid out in front of you – the map employs various symbols to signify meaning. You can recognise the symbol for a road, as well as major roads being represented differently to minor roads, and if present, you could probably recognise the meaning in a symbol that represented a hospital or, equally, a church. The choice of the symbol is important, particularly so when a map-maker is not present to explain their choice of symbols.

Rani and Theresa immediately thought of organisational symbols (particularly corporate branding) when this element was first proposed and Rani claimed that as a business they didn’t rely on symbols, even though “Symbols are quite easily applied to a lot of things in strategy” [1/3/806]. However, when Theresa expanded on her thinking, it turned out that, in fact, she did rely on symbols. Indeed, her application of symbols as a mechanism to “develop a common understanding” [3/3/618-619] is the purpose of adopting a symbol system in cartography.

Theresa sought to use symbols as a way of ensuring that her team were able to quickly grasp meaning. By choosing a ‘thermometer’ as a symbol, she was able to tap into a common understanding of how a thermometer works and use that as a mechanism for metaphorically displaying important information that requires a scale – in this case, the amount of a project phase that is completed. The skilful selection of symbols allows information to be readily understood, especially if there is a strong conceptual or metaphorical relationship between the symbol and what it is representing.

Staci was conscious of the role of symbols in communicating with different audiences. She selected common symbols that transcended the specific requirements of various technical audiences in some cases, opting to use symbols that are readily understood. In other cases, however, she chose symbols that had specific meaning for a specific audience. This is an important
distinction, for as Monmonier (1996) reminds us, when a map ‘…must address a wide variety of questions…the map’s symbols must tell the user what’s relevant and what’s not’ (p.19). The careful selection of symbols alerts map-users to important aspects of the map. Symbols that represent common phenomena alert the map-user to other aspects as well, such as frequency or density.

**Janelle** used the representational power of symbols to facilitate decision-making at policy level by relying on their ability to signify concepts without having to interrogate fine detail. **Janelle** saw individual details as being distracting from the larger work of setting high-level policy.

It should be noted, however, that appropriate selection of symbols (and the decision to include or exclude them from the map) is as much a political act as it is a practical one. By choosing to represent aspects of data that are important, symbols serve to raise the visibility of that data and also provide a mechanism to represent it in a more prominent manner, affording it the opportunity to be included in strategic decision-making.

The power in a symbol comes from its ability to convey meaning and the choices that a cartographer makes in determining which symbols to use not only convey intended meaning, but the choice itself is an act of interpretation. Indeed the cartographer may realise that s/he has been socialised (either directly through deliberate programmes of education, or indirectly through life-experience) and that the selection of a symbol is made on the basis that it may be easily deciphered by a(ny) map reader.

However, another possibility exists.

Common pictorial symbols can be used to explain common phenomena, but by inventing new symbols and a language to go with them, an organisation may be able to strengthen its internal culture through shared language and at the same time create a way for the organisation to examine that which is usually hidden.

Mappers cannot take symbols at face value (nor can map-readers).
Findings – Element Five: Selection

Rani takes a very pragmatic approach to selecting what goes into her maps – it is all defined by the ultimate audience. She said the following:

RANI: So it’s really just about purpose, isn’t it? So those discussions we had before, different audiences defining different, different levels of need. Um, it’s a very, very...very, very key point. It’s a very, very clear, uh, connection between a map and a strategic document.

[1/4/[950-955] [EFL]

Theresa takes a similar perspective, in that the data that is selected is based on a particular need, ultimately connected to transmitting information:

THERESA: Um...and so the absence of that information – if someone else was trying to look at this diagram from their purpose lens and that purpose lens didn’t align with the purpose lens of the design purpose – they could become very anxious.

JASON: Mmmm. Do you think about that when you’re putting together these things?

THERESA: Um, no, not really. I tend to be pretty focused – what am I trying to achieve? What’s the purpose of what I’m doing? And include information that’s necessary for that.

[3/3/1062-1070]

Selection is a positive act of choosing what to show. Janelle is careful about how she selects data to report as she is aware that it can have significant consequences in final decision-making. Janelle said the following:
JANELLE: Uh, and then the whole discussion becomes, you know, “Gee, we should be doing, I don’t know, more in China and less in Japan,” and proper discussion about, “How much do we move away from our traditional markets of the UK and the US and they’re a large number, even though the percentage growth in the Asian markets and all that…And if you’re not careful, the whole discussion and strategic debate is around that important issue, but you’ve lost the bigger picture. So what I did two years ago in the middle of all that, on the next slide, uh, I had a complicated diagram and the growth figures and whatever, and the size of the circle showed you the size of the market…the y-axis was the percentage growth. And I put these places called WA, New South Wales, South Australia in it. And suddenly it stopped everyone and thought, “Those markets for Victoria are far more important…than all those foreign markets.” And gee, we’ve got people dedicated full-time in, you know, Singapore and India. And then I’d say, “And don’t forget, most of the foreign spending is in Melbourne, so regional Victoria, um, the most important market is Melbourne."
Discussion – Element Five: Selection

‘Selection is a positive term that implies the suppression, or nonselection, of most features. Ideally the map author approaches selection with goals to be satisfied by a well chosen subset of all possible features that might be mapped and by map symbols chosen to distinguish unlike features and provide a sense of graphic hierarchy. Features selected to support the specific theme of the map usually require more prominent symbols than background features, chosen to give a geographic frame of reference’ …and...’In the holistic planning of a map, feature selection is the prime link between generalization and overall design.’ (Monmonier 1996, pp.25-27)

Although the choice of symbols is important as symbols convey meaning, of equal importance is the choice of what it is that a mapper wishes to represent in a map. Where Monmonier (1996) regards this as a ‘positive’ act, and states that selection is an additive process, (Harley 2001d) raises the prospect that the non-selection may be just as important. Harley regards this non-selection as part of a ‘theory of cartographic silence’ and ‘concerned with the dialogue that arises from the intentional or unintentional suppression of knowledge in maps’ (2001, p.84).

Here, Harley clearly regards maps as sites of contested meaning. A silence on a map could mean that the cartographer is ignorant of something, therefore it cannot be included, or it could mean that the cartographer is deliberately withholding something – and therefore shaping the meaning of the map in a deliberate way.

Rani sees the selection of data as a critical aspect of strategic thinking. Specifically, she is concerned with ensuring that the ‘right’ data is presented to the ‘right’ audience in order to facilitate strategic decision-making. She draws a tight connection between choosing the correct data and presenting it in the strategic plan.

Theresa echoes this sentiment when she talks about being ‘pretty focused’ [3/3/1068] about what she chooses to display and the ultimate goal of reaching an objective.
Janelle is the most specific about selecting data to achieve a specific, strategic point. Giving an example of when she had to provide an overview of tourism data for Victoria to the Board of Directors, Participant Four carefully explains the process of selecting important data from within a much larger data set and then presenting it in an effort to highlight that data which might be seen as inconsequential can, in fact, be very important. In this case, the data selected showed the disparity between international inbound visitors into Victoria and domestic visitors. Where it had previously been assumed (and resources had been committed to supporting) that specific international visitor strategies were the main driver of tourism into Victoria, careful selection of data was able to show that, in fact, the domestic market was significantly more important. This had consequences for resourcing within the organisation, including the potential closure of offshore offices especially given their on-going budget constraints. As part of a much wider discussion about the tourism industry in Victoria, Janelle was able, with careful selection of data, to paint an alternative picture.

In each of the cases above, the careful selection of data mean that a particular strategic position was claimed. Each of the participants were very specific about selecting ‘this data, not that’. Whilst this is unsurprising, by selecting specific data to display, each of the participants also unselected other data, and this is just as important to understand as the positive aspect of data selection.

So far we have examined the epistemic elements of title, frame, date, symbols and selection. These first five elements are concerned with the ‘what’ of the map. Following Element Six: Scale, the final five elements are concerned with the ‘how’ of the map. Here, selection is tightly associated with both the ‘what’ and the ‘how’ of the map. The participants all speak about choosing which data to show in order to convey their strategic message, but the power of this element in the model is highlighted in the choices the strategists make about which data to show and which to suppress. Just as with the framing element where the cartographer/thinker has to select the size of the frame and
therefore decide what is going to be inside the frame and outside of it (which can lead to the reinforcing or challenging epistemological perspectives about what is regarded as knowledge/important), selection is also an epistemological choice and thus something that isn’t/shouldn’t be done lightly. It’s very difficult to detect something that is not on the map in the first place and then to question that absence, unless the map-reader is very familiar with the geography of a space. So it is with strategic thinking. Unless a strategic thinker is sure that something exists (or has a high probability of existing) it is very difficult to see that which is not there, which is why a strategist needs to be aware of the consequences of the selections he or she makes – they need to be aware of the fact that when they are making a selection, they are also making an anti-selection.

The epistemic elements of title, frame and scale all seek to reinforce this aspect of selection. Depending on how these elements are arranged, some data will be unavailable for selection as it falls outside of (interest of) the map. Anyone using this model will need to be aware of this and make appropriate allowances to ensure that the element of selection is considered in both its positive act and its anti-selection act. As J.B Harley (2001d, p.106) so eloquently puts it:

‘There is no such thing as an empty space on a map.’
Findings – Element Six: Scale

Scale is very important to Rani. Finding the balance between having enough detail and too much detail is crucial. In the following quotes, Rani highlights that you need enough detail to be confident in a decision, but that if the scale is big, then it creates a problem of executives drowning in data whilst they try to figure out what the important aspects are. Rani said the following:

RANI: So you asked me to talk about the dairy industry and map...draw a map of the dairy industry. Well I could draw an endless conceptual map, almost. We would almost not have enough time or enough paper or enough scope to...it would be as detailed as, as the map of the world. [1/4/180-184]

RANI: When you think of it how scale actually works in a map...if you drew a map of the world, then you're not going to have much detail on there. You're going to have countries, oceans, capital cities maybe if you're lucky. You can take...and then you just, where do you go from there? Well you can draw a map of a square meter of earth if you want to. You can draw a map of a...you can probably draw a map of an atom.

JASON: Are you conscious of moving between scales?

RANI: Yeah, very much so. Yeah, you might have heard me yelling in here – not yelling but speaking loudly – on a phone conference and, um...we were talking about papers pertaining to the Board. So the scale of that generally is high. You don't want to go down. In the original draft he wrote, he wrote so much about who we were going to see and meetings we were going to have. I said, “No, no, no, no, you've gone into too much detail, too much scale.” So if you use a business metaphor or business analogies for certain things, you can be very high-level. And I think
generally the trend is with businesses usually, plan on a page… [1/4/528-556] [EFL]

For **Staci**, choice of scale is an important factor in communicating the right kind of data to the right audience. Like **Rani** above, executives are provided with a very high-level overview, and as such the scale is small, showing a broader overview, rather than the fine detail that would be present with a much larger scale. However, it is important to recognise that some people do require large-scale maps (with the corresponding finer level of detail). **Staci** said the following:

**STACI:** Yeah, I think of the word. Um…scale is targeted at…depends on the audience, purely on the audience. So senior execs…scale it right up, simplify it. Whereas for the guys that have to build, you have to bring it down…because these are builders. “Well what does that mean? What do I do? What about this? What about that?” So scale also definitely applies to all of these. [2/3/624-637] [EFL]

In the following quote, **Theresa** talks about how it is possible to operate at different scales at the same time and how it is even possible to abandon scale altogether in the quest of being able to explain something clearly. The scale used is a slave to the issue that is under investigation. Scale can change, but the meaning shouldn't. **Theresa** said the following:

**THERESA:** And so just using that visual to explain that. Now the A3 drawing, as I said, took up the whole page. But then you’re able to add more words to it, ‘cause I want to remind them, “This is what happens in this stream and that stream and that stream.”
JASON: Yep. So is that a…almost like a change in scale all within the same diagram, where if we look at that one…

THERESA: Yeah, there’s a change in scale, not a change in…concept.

JASON: Yep. Yep. Yeah, it means that we’re still looking at this particular chunk of data, it’s just that we’re going in. Zoom in, if you like

THERESA: Yeah. [3/3/901-912]

The ability to operate at multiple scales is echoed here in this quote from Janelle. Here she is talking specifically about policy decisions, and how a good strategist needs to undertake a ‘sanity check’ by thinking through the issues at multiple scales:

JANELLE: …how you approach strategic issues using mapping. And I mean, I suppose what you’re describing just now is, for me, a bit like a magnifying glass. It’s, um…or like a Google map nowadays, you know…how far you zoom in and out. And…well perhaps in that sense, I often think that…um…a sanity check of a good strategic approach to something, at some point is, ‘Well what would it do to that area or that issue?’ [4/3/399-407] [EFL]

JANELLE: So I guess visually that’s kind of a way in a public policy sense that we would use that concept of what I would call zooming in and zooming out. [4/3/447-449]

JANELLE: And so again the concept of what I call zooming in and out, uh, I can relate to absolutely. [4/3/456-457]

Scale is a very dynamic element, and that is why in the discussion section I refer to it as the central modifying element – a change in scale can have an impact on all other elements.
Discussion – Element Six: Scale

‘Most maps are smaller than the reality that they represent and map scales tell us how much smaller’ (Monmonier 1996, p.5). As scales get larger, detail gets finer. This has an impact on what can be practically shown at any given scale.

In Borges’s (1658) short poem On Exactitude in Science, he recounts the folly of making a map that is at a scale of 1:1:

‘...In that Empire, the Art of Cartography attained such Perfection that the map of a single Province occupied the entirety of a City, and the map of the Empire, the entirety of a Province. In time, those Unconscionable Maps no longer satisfied, and the Cartographers Guilds struck a Map of the Empire whose size was that of the Empire, and which coincided point for point with it. The following Generations, who were not so fond of the Study of Cartography as their Forebears had been, saw that that vast Map was Useless, and not without some Pitiessness was it, that they delivered it up to the Inclemencies of Sun and Winters. In the Deserts of the West, still today, there are Tattered Ruins of that Map, inhabited by Animals and Beggars; in all the Land there is no other Relic of the Disciplines of Geography.’

Monmonier (1996) gives a helpful explanation of how scale works:

‘Large scale maps tend to be more detailed than small scaled maps. Consider two maps, one at 1:10,000 and the other at 1:10,000,000. A 1-inch line at 1:10,000 represents 10,000 inches, which is 833⅓ feet, or roughly 0.16 miles. At this scale a square measuring 1 inch on each side represents an area of .025mi2, or roughly 16 acres. In contrast, at 1:10,000,000 the 1-inch line on the map represents almost 158 miles, and the square inch would represent an area slightly over 24,900mi2, or nearly 16 million acres. In this example the square inch on the large-scale map could show features on the ground in far greater detail than the square inch on the small-scale map. Both maps would have to suppress some details, but the designer of the 1:10,000,000-scale map must be far more selective than the cartographer producing the 1:10,000-scale map. In the sense that all maps tell white lies about the planet, small scale maps have a smaller capacity for truth than large scale maps.’ (pp.6-7)

Scale matters. The unit of scale doesn’t. By convention, scale is represented as a ratio so that at whatever ratio (e.g. 1:XXX) the scale is represented, one unit on the map represents XXX equivalent units ‘on the ground’; one inch on a
map represents XXX inches on the ground; one centimetre on the map represents XXX centimetres on the ground.

Monmonier is quick to remind us that the use of the words ‘represents’ rather than ‘equals’ is important when thinking about scale:

‘Sometimes a mapmaker might say “equals” instead of “represents.” Although technically absurd, “equals” in these cases might more kindly be considered a short hand for “is the equivalent of.” Yet the sceptic rightly warns of cartographic seduction, for “one inch equals one mile” not only robs the user of a subtle reminder that the map is merely a symbolic model but also falsely suggests that the mapped image is reality.’ (p.7)

The scale is the key factor in the epistemic technology of maps – when the scale changes, it has a cascading affect on all other elements. For example, the title being a descriptive element will change if the scale changes dramatically, so a map that once might have been entitled A Map of Australia on a small-scale map might have to be re-titled as A Map of South Australia (or whatever state), A Map of Adelaide or even A Map of the Suburb of North Adelaide or A Map of Brougham Place if the scale becomes significantly large.

Rani picks up on the fact that scale is dynamic and that the map-maker gets to choose the scale at which she works. By seeking to point out the absurdity of utilising a 1:1 scale, Rani inadvertently raises other issues associated with such an act. First, the resources required to undertake such an activity would be extensive. She seems to be saying that, given enough resources, an expert in their field should be able to reproduce exactly what is in their mind. This might be true in theory, but it is not very practical. So given the fact that unlimited resources are not available (and why would you want to recreate something that already exists as an exact replica anyway?), the practitioner is required to produce a model of reduced scale. It then becomes a task of which scale to select. This is reinforced in her second statement about choosing an appropriate scale to show enough (but not too much) detail for a Board presentation. The Board require a high-level overview, not the fine detail, and
therefore the scale at which the information is presented – the map – becomes much smaller, thus lessening the detail available to be displayed.

**Staci** points out that there is not one perfect scale for all situations/requirements. Some people, depending on the role that they undertake or their position within the organisation, require data at different scales. This becomes important as it places the Strategy-As-Practice practitioner in the centre of the strategic conversation. This central role requires a skilful choice of scale to facilitate the display of the required level of data/information. The choice of scale is a critical aspect of connecting the micro activities of the strategist (Johnson, G, Melin & Whittington 2003) with the organisational-level strategy and application with the ‘…macro institutional contexts’ (Vaara & Whittington 2012, p.286).

**Theresa** seemed the most at ease with working at different scales on the same map, zooming in or out as required in order to arrive at a clear message. As we were discussing this element, she had a drawing – a map – that she had constructed for her team and used this to explain how she maps out her thinking and uses this as a communication device. Specifically, she referred to the fact that on the same diagram, she had information at different scales.

There is precedence for such activity in the mapping literature. Wood and Fels (2008) talk extensively about maps that include call-outs as part of their paratext to enhance the meaning of a map and its power to communicate. Thus the main map provides context for the information that is of value/interest and the call-out (which typically is of a larger scale) provides very detailed, specific information. In this instance, **Theresa** uses the element of scale in such a manner, using one scale to provide context and another to provide very specific detail of a limited, but important, data set.

**Janelle** noted that it is the dynamic nature of scale that makes it so valuable when undertaking strategic thinking. The element of scale can be used to determine how data changes, how assumptions change or how thinking structures change when the scale is altered. In this discussion, **Janelle** referred to large policy decisions that were being made in haste and in response to an
urgent and important public issue. At the macro level, the policy decision seemed to work, but when the scale was altered to a large scale (fine detail), it was discovered that the policy failed to achieve its ends, and in fact had some detrimental outcomes that were unanticipated. Here she points out that only through applying multiple scales to an issue can a strategist be sure that they have thought the issue through comprehensively. Using multiple scales can provide a sanity check for thinking about strategic positions.

In this section, I have mentioned how the dynamic nature of the scale can have different effects on various other elements of a map. I would like to expand upon that line of thinking and suggest that it is not only the scale that is dynamic, but that other elements may also be altered. In particular, I am referring to the frame element. If the scale changes, but the frame remains fixed, then the result will be a reasonably understandable linear change in detail. However, if the map-maker chooses to alter both the scale and the frame of the map, then what gets displayed and at what granularity becomes a much more subtle set of choices. I’ll refer to this later in the element of ‘selection’. However, it is worth noting here that the ability for more than one element to be changed at the same time offers the ability for the map to become infinitely customisable. It then becomes a matter of skilful choice by the strategist to display precisely what they want. It is for this reason that I place scale at the centre of the epistemic technology of strategic thinking, as it has, I believe, the greatest influence on all other elements.
Findings – Element Seven: Projection

When explaining to the participants how the projection used in a map is a mathematical method for converting a three-dimensional object onto a flat, two-dimensional plane, I mentioned how this necessitated distortion (albeit that this distortion is acknowledged on the map itself). In the following quotes, Rani picked up on the fact that some methods are well established and therefore immediately useful. Later, she quickly draws the connection between a specific projection and its relationship to scale.

JASON: So I’m…I’m interested in the methodness, I guess, of your strategic thinking. Do you…do you change your method depending on, say, the audience or are you conscious of having a ‘[Participant’s name] method’?

RANI: Um…yes, and I mean I think we’ve discussed this before. I think that if you don’t have some sort of framework, um, it’s too hard. So yeah, unfortunately it’s just…there’s not a lot of room for sophistication sometimes – you’ve just got to use the framework, everything gets looked at from this prism, and that’s absolutely bog-standard stuff. [1/4/659-669] [EFL]

RANI: But, um…and every single one them – and there’s probably about eight papers that are getting done today or getting in today – they are all coming in from other members of staff…and I’m not happy with any of them. But they’re all new and…one of the things I’ve said to them is that…“Don’t try and guess what I want the Board to know. Uh. It is not an expectation I have that you can read my mind. So call a meeting and this literally takes five minutes. We’ll get on a whiteboard and we’ll say, “This is what the paper should have in it. Here’s the background, three or four points we should make, here’s our objective, this is how we’re going
to get there, here’s our implementation.” Take that off and you’ll get that 99% right first time.” Whereas when they just invent it without that process, um, sometimes they don’t even get it half right. I’ve virtually got to go back to them and tell them to do it all again. Start from scratch. I actually had that conversation, so they’ve wasted their hour doing the first version, I’ve wasted my five minutes reading it. I haven’t wasted the five minutes then telling them how they should have done it. And this is not me being dictating to them, this is the synergies of a conversation which says, “This is what’s in my mind about the Board,” them saying to me, “I think we should add that.” You know, this is not dictatorial. But it’s making sure…now over time, trying coming back to your question, over time those frameworks start to become very familiar to people…and I…you know, the effort to get the right draft and to get that…that clarity of scale across and meaning, um, they’ll just get better and better and better at it.

JASON: Yeah. The thing about a projection – and all projections do this – they distort. You know, you can’t…that’s just the nature of them. And depending on the mathematical formulas that you use, they distort in different ways. So is…is that framework that you were talking about, that…is that aimed specifically at making sure that everybody understands that this is the way it’s presented? We’re aware of the distortions that it has…but as a team, across the organisation, we’re all using that same projection, rather than using one over here that’s slightly a little bit different and distorts the data...

RANI: No, that’s a good…yes.

JASON: …that way and I’m thinking about this way.
RANI: Well I, I, I…I think the key with distortions in maps is, is like that TED interview. After a while, human beings, what they’re brilliant at is they, they, they know it’s not literal. Um. That’s probably a slightly bad analogy but when I get a one-pager as a director or as an executive, I know that not every single thing and everything on it…and I know it’s high-level and I know it’s a summary. I have…I have the capacity as a human to ask questions. So you…you’re then, obviously the primary purpose of that is to put it in an agenda, give an overview and then you have…you then offer the Board the opportunity to ask about what’s not there. And that’s the skill of a Board, isn’t it? That’s the key to a good dynamic relationship with a manager and a team member or a Board and their executives, to say, “Here’s a good thorough overview. Um. What does it trigger? Is Greenland really that big? If I drilled down into Zambia, what am I going to see?” Um. So it gives you the capacity to enquire. So if you understand distortion, you understand scale, you understand the limitations of the availability of information and the capacity of any busy human being to resource every single thing. It’s not like people are trying to hide anything, it’s not, um…it’s the opposite, it’s just to say, “Right, let’s get enough there to give them the big picture and we trust that they’ve got the skills to, to enquire as they see fit.” [1/4/ 691–776] [EFL]

Staci recognised the importance of projection and, possibly because of her background as an engineer, pointed out that it is a known problem which can be overcome. Staci said the following:

JASON: Um…and then that lets you know the area of which you’re able to…you’re looking at. Um…projections. All maps try and, uh, take a three-dimensional object – the surface of
the earth – on geography maps, and then they try and convert that to a flat piece of paper. So they take a three-dimensional object and convert it to a flat plane. For them to be able to do that, they need to do some mathematical trickery and the impact of that is that a projection will always skew something. So, um…it will stretch it in one direction or…you know, one direction or another, so that you have to do that conversion in your head if you really want to get back to understanding what reality is. So an example here would be…the typical maps you would have seen, um, at school…hanging on the wall at school. This is helpful, ‘cause it’s got squares. If you think of these at the equator, latitude and longitude, yeah? Latitude…so this is the equator. Longitude runs around the world like that, yeah? Latitude, longitude sorry. At the equator, these are square. They’re the same distance this way as they are that way. But when you get to the top of the planet where it all curves in, what you find is that the width stays the same but the distance…increases. So the impact you have up here in, say, Greenland, is that you end up with a very long, but what looks like to be an exceptionally large piece of dirt. Reality is if you were to…it you looked straight down on it and you took the middle of Greenland as being the equator, Greenland’s much smaller. It’s just that in the map projection…

**STACI:** It’s the stretched curvature situation.

**JASON:** Yeah, it gets stretched north-south. Same thing happens to Australia and New Zealand. Down here we kind of get stretched.

**STACI:** You do actually get maps that have the accurate representation of country size... [2/3/491-524] [EFL]
All participants recognised that these issues are complex and have multiple dimensions. Here, Theresa highlights some of the problems with having a shared, understood method in that some people may feel uncomfortable in challenging it:

**THERESA:** And I think that’s kind of...that does happen a bit. I wouldn’t call all of the diagrams and things that I do maps, but I think they still have that same problem in that you’re over-simplifying things and you’re taking concepts that are multi-dimensional and trying to draw them in a two-dimensional context, and the things that aren’t explained on that page might not get focused on or thought about. So that’s the downside of having something that’s quite effective at being able to develop a common understanding and a picture of where we are and where we want to get to or how we’re going to get there – whatever the purpose of it is. The downside is that that excitement that’s built then about having common understanding – real understanding as opposed to, “Well if this is what [Participant’s name] is saying, I’d better just nod and agree and figure it out later or else ask someone else ‘cause I don’t want to look stupid right here and now. They have that feeling instead of genuine getting it and being able to contribute and even a sense of ownership over it. That positive feeling can actually mask some of the bits that aren’t being talked about. ‘Cause the more you understand something, the more comfortable you are with it and the less you’re likely to go, “Yeah, but we haven’t thought about this, we haven’t thought that out.” [3/3/ 503–524] [EFL]

Of all of the participants, Janelle was conscious of the quality of the data sources that sometimes are relied upon and how if a clear understanding of how the data was collected is missing, there will be an impact on the final result.
The methods used in drawing conclusions is also important. Janelle said the following:

JANELLE: I look deep down and think part of the problem sometimes is that we all assume that there is this good data around and we just need to interrogate it. To be honest, particularly crime-related data is generally quite poor. And we need to accept that. You need to be aware of that before you draw any conclusions. You know, we need to improve the data. But yes, I think it’s important now and then to interrogate it and to think, “Hang on, that’s not really showing that.” Or, you know, “There’s not a decent time series here,” or “This study done five years’ ago is done in a very different way than five years’ later.” So no, I think to be fair sometimes in public policy, it’s not as simple as…using data consistently. But often the data’s just not there. [4/3/758–778] [EFL]
Discussion – Element Seven: Projection

The map projection seeks to ‘...transform the curved, three dimensional surface of the planet into a flat, two dimensional plane’ (Monmonier 1996, p.8).

A map projection is essentially a mathematical method. Depending on which method a map-maker chooses to undertake, the projection/transformation will have an impact on the final product. In this instance it is important for the map-maker to understand that projections distort and it becomes a matter for the map-maker to decide which kind of distortion she is willing to accept.

Monmonier again:

‘Although the globe can be a true scale model of the earth, with a constant scale at all points and in all directions, the flat map stretches some distances and shortens others, so that scale varies from point to point. Moreover, scale at a point tends to vary with direction as well.’ (1996, p.8)

Thus projection is a method of translation. Different projections have different impacts on the way in which a mapped area is portrayed. Sometimes it stretches this way; sometimes, that. In the end, the cartographer has to make a decision about which projection to use, and this is not a decision that is free from values. For example, the Mercator projection, which is centred on the equator, tends to stretch the north-south dimension close to the poles, thus elongating those areas. So a ‘Mercator projection...renders Greenland as large as South America, whereas a globe would show Greenland only about one-eight as large’ (Monmonier 1996, p.14). In this example, the choice of a Mercator projection distorts (and in effect favours) countries like Canada, Western Europe, Australia and New Zealand, making them look larger than they actually are.

Cartographers choose projections to help facilitate map usage. By selecting the method through which they will make projections, they can alter various dimensions of a map to encourage particular interpretations. Even though the Mercator projection ‘stretches’ landmasses (and oceans) towards the poles, its power lies in the fact that anyone with a ruler can plot a straight line between two points which will show a line of constant bearing of immense value to a
participants in the researchnavigator. Other projections seek to distort in other ways. The Peters projection, for example, claims to keep the relative areas of the landmasses equal but it would be impossible to plot a straight line between two points to get a rhumbline (a line of shortest distance across the surface of the earth). Projection is a matter of deliberate choice.

Harley (2001a) reminds us that the choice of projection may encounter some resistance, particularly if it is not the ‘usual’ method. Referring here to the Peters Projection wherein Arno Peters used an equal-area projection that stood in opposition to some established cartographical conventions, Harley shows us how this can be challenging to the status quo:

‘The real issue in the Peters Case is power: There is no doubt that Peters’s agenda was the empowerment of those nations of the world that he felt had suffered a historic cartographic discrimination. But equally, for the cartographers, it was their power and “truth claims” that were at stake. We can see them, in a phenomenon well know to sociologists of science, scrambling to close ranks to defend their established ways of representing the world.’ (2001, pp.200-201)

The participants in the research also use the element of projection as a means of facilitating the use of data and to encourage particular readings of their ‘maps’.

Rani is conscious of using standard frameworks – projections – in order to demonstrate a consistent view of the world. She would like the projection to remain the same for all Board members, even though the content may vary. The advantage of using the same projection is that the rules remain consistent, and everyone therefore knows how to interpret the data: “everything gets looked at from this prism, and that’s absolutely bog-standard stuff” [1/4/669]. The other aspect that she raises, however, is that it is right for people to question the projections and the methods. Referring again to the limited amount of time available to Board members to synthesise data, Rani points out that even when a particular projection is agreed, that it is correct for people relying on the map to question it thoroughly to demonstrate that they understand how the information that is being presented to them was generated.
Staci understood the concept of projection immediately and was able to provide another technical phrase to describe it. She also was able to point out that projection is a choice and that careful selection of a projection will result in data being presented in such a way as to facilitate understanding. Her point here was that by understanding how data gets distorted and then working with that, a strategist can utilise this element to communicate an important aspect of the data, emphasising or preferring one dimension to another. Here she pointed out that even though some map projections distort the areas of the landmasses of countries such as Greenland, “You do actually get maps that have the accurate representation of country size…” [2/3/524].

Theresa pointed out the fact that even though there might be some common understandings about projections that are used within her organisation, and that this is useful as it helps speed up understanding and communication, that it potentially has a downside. She pointed out that it becomes difficult for someone to challenge what is being presented and that the shared understanding might work in a deleterious way.

Echoing the concerns of Rani, she raised the issue of having to rely on people to actively challenge the status quo. Over the course of the data co-generation phases, Theresa typically took a position of seeking out ways to extend or challenge thinking – both her own and that of others. In this passage she demonstrates that again, suggesting that complacency with a method and a wide acceptance of a method can lead to results that are not challenged or questioned enough. She finishes up the discussion with: “Cause the more you understand something, the more comfortable you are with it and the less you’re likely to go, “Yeah, but we haven’t thought about this, we haven’t thought that out.” [3/3/522–524].

Janelle was the only participant who drew a connection between the quality of data and the methods used to show relationships between the data. She focused on the fact that it doesn’t matter what projection you use; if you have poor data to begin with you are likely to get a poor result. She emphasised the
relationship between having a suitable method and robust enough data to ensure that the method is appropriate.

All four participants understood the element of projection and the impact that method choice can have on their thinking. Even though each of them understood projection in terms of their own context, each also recognised that their methods have both advantages and disadvantages and that it was important to not only understand the methods used to present or interrogate data, but to ensure that they didn’t become complacent by using standard templates. Most of the quotes were of a cautionary nature, warning against blindly applying a methodology, even though it can be efficient.

The flip side to this is that a thoughtful application of a method can help to highlight aspects of the data in order to facilitate a particular ‘reading’, and so whilst it is important to understand the limitations of a method, it is important to also understand that it can be used in specific ways to enhance meaning. ‘…as the Mercator and gnomonic maps demonstrate, the map-maker can often tailor the projection to serve a specific need’ (Monmonier 1996, p.16).

Put simply, projection matters.
Findings – Element Eight: Simplification

Rani referred to earlier parts of the data co-generation phase when we discussed simplification. For her, simplification is a tool that is used to take a very complex issue and make it readily understandable to an audience. Referring to a presentation that she had to give to an industry conference, Rani said the following:

**RANI:** Yeah, yeah. So what I said to the [industry] Conference was that, I said, “What I want to show you today is inside my mind and the map that I build, um, and the logic of that map, so that when I go and sit down with Minister Combet, who’s sitting there…um…I picture this map and I talk logically. It’s like I’m following a path.” Now it’s actually a supply chain, so it’s got farm, factory, market. Right. And so it’s just, that’s all it is. Farm, factory, market, with issues kind of like streets coming off this underground map. And the amount of people who came up to me and said, “Can I have that? You know? Can I have that?” I mean, it’s a very, very simple…Anyway, that’s what I did. So I only ever really had one slide. And the map formed as I clicked.

**JASON:** They would have loved that.

**RANI:** They loved it. So yeah, I had huge amounts of people come up to me and…’cause they had, they had a picture of my whole talk…in one slide, which is a very rare presentation, isn’t it? [1/4/1-33]

Staci said the following:

**STACI:** Simplification, yes. Because it’s targeted at audience.

**JASON:** So how do you know…how do you know when you’re doing this and you’re thinking about your audience, to…where do
you stop the simplification? How do you know...you're simple enough but not too simple?

**STACI:** You need to be able to articulate it in a single slide or a set of slides, because if you're briefing the executive team...you're not going to have the opportunity to step through a 100-page document. So the calibration of...

**JASON:** Because of time?

**STACI:** Time. It's purely time, attention-span...And audience. If you have a two-hour session where you're going to go through them, if you had a 100-page, the first thing they'd want is an executive summary. So what you're doing is just taking the exec summary and you're putting it into a set of slides that makes sense. I say slides, I mean it could be whatever. And so what you're putting...one of the things they're interested in, do they care that we need to deliver this something between here and here and this is how we're going to do it now? They may want to know, “Yes, what are you doing?” [2/3/875-908] [EFL]

There is value in being able to take a complex issue and simplify it. In the following quote, **Theresa** refers to her use of 'Textas' to help her make sense of the situation. This is where she tries to map out relationships in broad strokes, rather than relying on deep detail. She also uses simplification to help clarify things for herself or others.

**THERESA:** Yeah, and I find I often use...resort to the Textas when things are overwhelming – either overwhelming for someone else or overwhelming for me. So the most recent drawing I did was when one of my senior managers was talking to me about the various responsibilities they were trying to manage and I thought to myself, 'I wonder if there’s a connection between these and part of the problem is we’re only talking about parts rather than talking about
the whole. And I was feeling confused, so I thought, ‘I wonder if it’ll help if we do try and capture this as a whole and how they relate to each other.’ [3/3/1120-1129]

**THERESA:** Simplification. So sometimes the purpose of a diagram is really useful when things feel overwhelming or confused, or there’s similarities between things but you can’t easily...you might not yet even realise it or you don’t understand it, so putting it together helps people with that. And it does tend to have the effect of simplifying, even if it’s not...it’s simplifying the understanding of something, rather than necessarily it being simple. [3/3/1158–1165]

Simplification of the data to an appropriate level can reveal patterns that might be hidden when too much detail is present. In the following quote, **Janelle** highlights the problem of trying to consider too much data and as such losing the big picture:

**JANELLE:** But too many slides, too much detail, and at the end said...summarised the target market, which they were about to go and test. So I said, “Is it fair to say that, uh, although China’s, you know, 1.3 billion people, here are the three or four cities that we call Tier One, but in the next five or ten years there’s probably another dozen cities that you might call Tier Two, and they’ll grow, is the size of potentially the travelling public, and that what we’re really focusing on is people roughly between 25 to 40, with tertiary qualification, with a reasonably good job and who have a little bit of English and are likely to travel. And the answer was, “Well, yes.” And I said, “We’ve taken a year and a half to figure that out.” And I said, cheekily, “Really? Aren’t they exactly the same cohort that we target here for the last ten years?” “What do you mean?” “We target 25 to 40-year olds in Australia to come and enjoy the nightlife...
and the sport and the theatre of Melbourne. They’re the highest spenders.” “Well yes.” [4/3/1343-1358]
Discussion – Element Eight: Simplification

Simplification ‘...reduces detail and angularity by eliminating points from the list, is particularly useful if excessive detail was “captured”...or if data developed for display at one scale are to be displayed at a smaller scale’ (Monmonier 1996, p.27).

Too much data can be overwhelming. The cartographer must make a choice about how much data needs to be displayed on the map – is it possible for less data points to be displayed, yet the meaning remain clear (or clear enough?). Here a cartographer will decide how much to show. As with previous elements, the agency of the cartographer is implicit – choices have consequences.

Rani recounts how even though one might be in possession of an extensive set of data (refer to the findings and discussion on the element of ‘scale’, earlier), simplification of that data is important when presenting to an audience. Simplification in this instance doesn’t refer to excluding data from the map, only ensuring that the right amount of data is shown in order to facilitate the transmission of the message. It is an act of choice about how much data should be displayed and what the meaning of that data is. Simplification enables the core message to be shown and also facilitates rapid transmission of the message – the purpose – of the map.

Staci picks up on this aspect of simplification and elaborates, explaining that it is a combination of getting just enough of the right information across to enable others to make a decision. Here she refers specifically to the fact that an overwhelming amount of data is unlikely to be welcomed by decision-makers as they are often constrained by how much time they have available to consider the data, and what their ‘attention span’ is like. Staci points out that the act of simplification is also an anticipatory act. What is it that the likely audience is going to want or need?

Avoiding overwhelming an audience with data is one thing, but presenting it in a manner that allows someone to understand the central message is another. Theresa highlights the fact that simplification can be a tool to cut through the data in order to get to what is really important. It is also a mechanism for
surfacing the important relationships within and between the data. **Rani** is not advocating reducing the complexity of the underlying dataset, but rather finding a way to make something that is complex more understandable.

**Janelle** agrees. She is also interested in ensuring that the message is not lost amongst an overwhelming amount of data and demonstrates how, even when presented with a large amount of data, a simplified message can be just as powerful and revealing.

‘Shape simplification in map-like representations is used for two reasons: either to abstract from irrelevant detail to reduce a map user’s cognitive load, or to simplify information when a map of a smaller scale is derived from a detailed reference map’ (Barkowsky, Latecki & Richter 2000, p.41). What this means is that it is easier for map-readers to understand a map if it has been simplified and they are not overwhelmed with data and secondly, simplification means taking a lot of data that is present at a large scale (fine detail) and choosing what is important to show when you create a small-scale map from that data (less detail/zooming out).

When the situation calls for collaboration, sharing of information where there is asymmetric access to data, or the audience does simply not require, need or want fine detail, simplification can help a strategist get to the core of the issue.
Findings – Element Nine: Displacement

In this part of the interview, Staci was clearly becoming fatigued. Unsure of her own thinking practice, she was unwilling to rule displacement out, but at the same time she couldn’t definitively say that she had ever used the concept in her thinking:

JASON: Displacement.
STACI: Displacement…
JASON: So that’s the idea that you move stuff apart so it doesn’t cram over the top of…you know, two words on a map that are close together, you might split them apart maybe a little bit more so that they become easier to read.
STACI: I think that’s…yes. Because, like in your summary – it’s a summary – if you have a slide with 50 bullet points with just text, sentences, you can completely lose the message. So it comes into…um…maybe just common sense.
JASON: Yeah. So not at the…let’s take this not so much at the production of a Powerpoint deck end, but at the strategic thinking end. Do you move these things around in your head and give them more whitespace around them? Because often what goes on in your head ends up in a document somewhere. But that document…the constraints of that document – often it’s A4, there’s constraints around templates that organisations choose to use, the software that is used comes with only a certain number of functions so it can’t do everything, blah, blah, blah. So I’m interested in the thinking process, where you’ve got two issues that might overlap or do you split them out to think about them individually, give them their own piece of space before you translate it into some sort of document down the track?
STACI: Maybe.
JASON: Maybe. Okay.
STACI: Maybe. I don’t know.

Referring to a diagram that she had produced that was at risk of being crowded and therefore important aspects being omitted, Theresa said the following:

THERESA: Hmmm. So I guess in this instance, did it help people have the level of understanding they needed? Did it help people to diffuse confusion that they had? Um…did it tell the whole picture, i.e. could any people of detail relevant to the story relate to something on the page? You know, so there’s nothing…you know, it’s not like, “Oh but then there’s this other thing.” “Oh, is that in the way of one of these things?” “No”. “Well then you haven’t got it right.” Or, “Yes it does. It fits in with that box.” [3/3/1172-1179]

And later when discussing the physical diagram she had in front of her:

JASON: So I was wondering whether or not that’s maybe part of what goes on with your A3, why you select A3 as default.

THERESA: It just gives me a bit more space to fit everything in.

JASON: The important stuff?

THERESA: Yeah. But things aren’t officially…um…spaced. Probably. I mean, I’m not sure, for example, whether that scale really works.

JASON: It doesn’t matter?

THERESA: I don’t know that it does. There’s nothing terribly disproportionate about this. [3/3/1226-1234]

Referring to the point that sometimes you want the relationship to be a bit ambiguous, Janelle said the following:

JASON: The next element I want to think about is this idea of displacement. And this is…so when you see on a map, you might see…this is a really good example of it. A lot of
really, really crowded place names all in one spot. And because it starts to look a bit messy, what they’ll do is they’ll draw a little line, you know, and then they’ll put the label…over here somewhere. But what that has the effect of, it has the effect of removing the name, if you like, the naming aspect from the locational aspect on the map. Do you have…this conversation, I suppose, is probably a little bit harder to think about whether or not you actually do that. Do you…? You know, where you start to divorce the name from the location? Start of relax some of those, um, associations. They’re still there but they’re not as, I guess, immediately obvious as…as they would be if they were right next to one another. In order to be able to fill a little bit more data in or to be able to explain something in a clearer way. And it’s okay if you say no, by the way.

**JANELLE:** Ah, I think in a general sense yes, we all need to do that sometimes with a particular audience to, um…aggregate…the issue. In a marketing sense, what you’re talking about happens all the time. [4/3/1455-1481] [EFL] (Emphasis in original.)
Discussion – Element Nine: Displacement

Displacement ‘...avoids graphic interference by shifting apart features that otherwise would overlap or coalesce’ (Monmonier 1996, p.27).

At any particular scale, items on a map may be too close together to easily distinguish them apart from one another. Displacement allows individual elements of the map to be more easily identified. This may have the impact of making those elements seem more important that they actually are, or, not having proper regard to their true nature. So where on a map two symbols might overlap, they may be shifted (slightly) apart in order to allow differentiation to be achieved. This may come at the expense of accuracy in terms of correspondence to (spatial) location. However, it may be deemed more important for each symbol to be recognised clearly than to surrender to accuracy and lose ‘meaning’.

The participants found this element difficult to resolve with their own praxis. The element makes sense from the perspective of a map and with the graphical interface within it, and it was to this that Theresa referred. She was able to point to a diagram that she was using to help her team understand something – to work their way through an issue.

Staci was beginning to tire at this point in the interview process. When asked about displacement within her own thinking processes, the best she could answer was “Maybe. I don’t know”.

Although the participants found it a difficult process to grasp, I find the displacement element one of the easiest to understand. When I first came across it, I realised that I use it often in my own strategic thinking praxis. I mentally move objects apart from each other to get a clearer understanding of how they exist as individual objects without being overshadowed or partially hidden by other objects. The cartography literature is interested in this element as a stylistic device, one that is employed to make the reading of the map easier.
**Staci** showed understanding of the displacement concept, even if she misunderstood the point I was trying to make about its application in her strategic thinking praxis. However, having regard to the broader discussions we were having, this was mostly in line with the way that **Staci** understood her own strategic thinking praxis. Most of her work was pre-programmed and even though she was called upon to make significant strategic decisions, those decisions were always within a well-defined frame. Furthermore, a large part of her work involved explaining concepts to other people and developing shared understanding of particular requirements. Often her work involved a (re)-presentation of strategic thinking that had been done elsewhere and by other people. One example here was how using bullet-points instead of sentences in a PowerPoint presentation is analogous to the use of displacement in a map. Bullet points enable the message to be displayed in a manner that doesn't appear graphically overcrowded, thus making the message easier to read.

**Theresa** was concerned with making sure that the entire message is made available for people to see. Referring to a diagram she had brought to the discussion with her, she pointed to parts of the diagram where she had chosen to represent information in a manner that was clear and uncluttered. She was less concerned that the diagram held together with some sort of internal logic (such as adhering to a set scale), but more interested in making sure that all the important points were clearly visible.

Drawing on the fact that setting strategy is as much a political act as a rational one, **Janelle** mentioned how, when it serves a purpose, displacement (or rather the lack of it) can be valuable. In this instance, she refers to the fact that, when it comes to presenting data sometimes, you don't want to make dissimilarities more obvious by making it easier to understand. The downside of making something clearer is that it draws attention.

Conceptually, the idea of displacement is closely linked to the element of scale. ‘A substantial reduction in scale, say from 1:25,000 to 1:1,000,000, usually results in an incomprehensibly congested collection of map symbols that calls for eliminating some features and displacing others’ (Monmonier 1996,
p.27). Depending on the scale at which a strategist is considering data and whether or not they zoom in or out of a particular data set, displacement may be required to ensure that important relationships are highlighted.
Findings – Element Ten: Smoothing

Rani took the perspective that smoothing of the data is, for her, not a desirable thing. She prefers to see the angularity in the data and then make a decision about it, and about how she will respond. Taking to a whiteboard in the room, she shows me with a simple diagram why:

**RANI:** I guess so. [SIGHING] It’s not really simplification, is it? It’s…um…is it a reduction of noise? Um…is it….? Does smoothing give you focus? It’s a hard one. I mean, if I see a graph…if I see a graph that does this, right? And a smoother makes it look like that, don’t they? So they’re sort of taking these slightly…something in my brain still likes the jagged.

**JASON:** Right. ‘Cause depending on the level of smoothing that you do, I mean, as an ex-statistician, you know, the choices that you make about how much smoothing goes on …the trend line could become…

**RANI:** Well that’s right. You could…that’s a bad example for a trend line, but that’s an ultimate form of smoothing, isn’t it?

**JASON:** Yeah. So you’d be conscious of how much of that goes on when you’re doing your thinking? Like how much am I smoothing this data in order just to get the point across? Or enough of the point across so that we can make a good decision?

**RANI:** Yeah, probably. It’s a good question. I, um…I tend…I…in a purely statistical, visual way, I tend not to do it. Um. I tend to leave the visuality of volatility, for example, and, um…it is a very volatile industry, international dairy trade. We talk about…so one example of smoothing sort of, is that here’s the international dairy market, right? So this was, say, 1999 and this was 2006. This was the GFC, right? So this is…now this isn’t smoothing but this is…so this was the old per-Asia boom commodity price …um. This is where we’d
want to trade, up in these new…So even post-GFC, we’re still up in a new area. So you can have your cake and eat it with smoothing and simplification and …messaging. You don’t have to hide the volatility or hide the…um…This visually says simply, “We’ve gone from this range to this range.” But I haven’t lost the ups and downs in there either.

JASON: So your preference really then is, is to include that level of detail, but then sort of say, “This is the story it tells.”

RANI: Yeah. I guess so. [1/4/1037–1084] [EFL]

For Staci, smoothing was a process that occurred only after all the detail and been examined and she was sure that everyone understood the implications of the data. She also recognised that her version of smoothing may be different to someone else’s, but that the ultimate point was to ensure a clear and widely understood message.

JASON: When you take them on the journey. When you do your…before you take them on the journey, when you’re thinking about that journey…are you smoothing?

STACI: No. Not when you’re going on the journey. You may do it when you…how do I explain this? When you….for me, when I’m doing my thinking and trying to get to that end state, like this now, which I’m about to start doing that, on Monday…right? Do you see how I’m going to get there? Plan of action for three weeks. So that’s going. But I’m not going to do any smoothing now. It has to be right. I have to work it out. I’m going to do that, that, that, that….And I’m going to refine it. And I’m going to change it and I’m going to refine it again. So by the end it’ll be smooth. So intuitively I’ll get to that. The smoothing happens…it’s a function of time. Does that make sense?

JASON: Yep, yep.
STACI: For me. For now I'll just chunk it and say, “We’re going to do that, then we're going to do that, do that.” And by the time we get here, we should know what that is. But I won't leave that until the end. So I'll start that now, start with the end in mind now. And see. So we’re just dipping into it as we go.

JASON: With the end in mind here, you know, that it's the 26th September. Like you’re talking about there, really it’s tactical, rather than…

STACI: It’s tactical. Sorry. But remember, to get to this…this…we have to work out…the tactical will happen over the next three weeks. What we have to work out is what happens from the 1st October…‘Til whenever. What are we going to do? What are we going to build? Who are we going to train? Where are they located? How are we going to work all that out? This is the easy bit. That's done. To get to that point means we need to go right to the end where it’s built and done and come back and articulate that. That’s the hard part. We have to start doing that. Yeah.

JASON: Okay. So...do you do...so is that where the smoothing would occur, do you think? Like in that…you know, October, whenever period? Is that where you start to add pieces in, take pieces out?

STACI: Because we all know the detail. [2/3/951–1003] [EFL]

And when asked if she was aware of doing it, Staci had this to add:

JASON: Are you aware of it, when you do it?

STACI: Um…not consciously, no. I'm very aware of the…trying to get a synched message…across. And doing that means you need to remove all the other crap…and make it simpler, smoother. [2/3/1025–1027]
**Theresa** focused on the impacts of not smoothing data. She indicated that something which doesn’t look natural or looks somehow out of place might inadvertently draw the attention of a Board.

**JASON:** Okay. The other…the other aspects that we will often see in these kinds of maps are smoothing. So the idea that you might take something that’s actually quite jagged – a line that’s quite jagged – and they’ll smooth it. Because for all intents and purposes, it makes it look nicer. And because it looks nicer, people are more likely to engage with it. Same with enhancement. When on a map they’ll make mountains look like mountains or the ocean look like ocean or rivers look like rivers, because it’s more aesthetically-pleasing and it manages to get the point across as well. And I’m wondering whether or not that’s what happens in the translation between the map…the diagram we’ve got here and the diagram that’s in the Board document, that kind of enhancement into that…

**THERESA:** That smoothing?

**JASON:** Yeah, the smoothing and that…you don’t necessarily hide the jagged edges…

**THERESA:** Oh I think you definitely do when you’re presenting to a Board because the jagged edges are then what they would focus on. So if you’ve got a jagged edge and – I mean, I don’t mean this literally in terms of the diagram - there’s something problematic. If it’s important enough for the Board to focus on and talk about, well then you’ve got to actually draw it out and talk about it and explain how it’s being managed, but if it’s not a very important jagged edge or it looks more jagged than it really is, then I think it’s better to draw it in a way that doesn’t look jagged. You’ve got to make that judgement.
JASON: Yeah. First that translation process.
THERESA: Yeah.
JASON: ‘Cause you might not actually be talking about drawing a physical drawing, you might be talking about...
THERESA: Yeah.
JASON: …talking about support and…
THERESA: Yes.
JASON: …ask them to go over that...
THERESA: Yes.
JASON: …because it’s really not...
THERESA: Yes, ‘cause they’re getting worried about something that they don’t need to worry about. This is the…they’re only worried about…or they should be worried about this and actually highlighting to them it’s a problem and here’s what we’re doing about it. [3/3/1235-1284] [EFL]
Discussion – Element Ten: Smoothing

‘Smoothing ‘...diminishes detail and angularity, might displace some points and add others to the list’ (Monmonier 1996, p.27). This element is related to the element of ‘simplification’, above, and here, the goal is to reduce the appearance of a series of ‘abruptly joined straight line segments’ (p.27).

Smoothing of data allows for a ‘neater’ story to be told. It also allows outlying data to be excluded. Where this can prove to be important is in the cartographer’s decision about how to undertake the smoothing process, and to what degree. Smoothing is also intricately related to the scale at which the map is drawn. Thus the choices of the cartographer who is constructing a large-scale map (one that is able to show a higher degree of detail) become more critical. The more smoothing that is applied at a larger scale, the more the magnitude of the ‘white lie’ where the map fails to represent the data as collected. It may be that this doesn’t really matter and that it is better to show a smooth line on a map rather than a jagged one, (for example, the banks of a river), but still the cartographer has to make that decision.

**Rani** regarded the act of smoothing as being a two-step process. In the first instance, she would rather not do any smoothing at all, preferring to understand the variance in any data that she is thinking about. She claims that it is important for her to understand the full picture of the data but then, in the explanation of the data, portray a smoother story/narrative. This is consistent with previous statements by this participant, where she relies on the ability of the people she is presenting work to be able to sensibly interrogate the data and draw their own conclusions.

**Staci** also thinks of smoothing as a two-step process. The first step is to ensure that the tactical-level data is well considered and accounted for. The second step is to communicate this data in a manner that allows for shared understanding of the phenomena with others. It is from this shared understanding that a smoothed version of the data emerges. It’s important to understand that in this case, the data itself hasn’t been smoothed, but the way
Theresa takes an alternative position to Rani, suggesting that the data should be smoothed, particularly when presenting information to a Board of Directors. Her argument is that rigour needs to be behind the interpretation of the data, but that outliers draw attention and this may not be useful from a strategy setting perspective as the Board may focus too much on individual data points and less on the overall strategic picture. She makes the point that smoothing is a valid process to undertake, so long as the smoothing doesn’t have an adverse affect on the analysis of the data. Theresa highlights the fact that if a data point is an outlier and it is significant, and it has a material affect on the analysis, then it is right to pull it out and explore it further. Smoothing in this instance is not helpful.

The three perspectives on smoothing from each of the participants all centre around one thing – it is up to the judgment of the strategist to determine when, if and by how much smoothing should occur. They agree it has a role in helping to create a clearer understanding of complex phenomena, but they differ in their approaches to it.

Rani relies on others to smooth their own data, preferring that the raw data be made available so that any smoothing that is subsequently done can be considered in its fullest context.

Staci believes that any smoothing should be done in a collaborative setting so that all members of the strategy team can contribute to the process. Here, she understands smoothing to be a smoothing of meaning rather than a smoothing of data.

Theresa believes that any smoothing should be done before the data is displayed, and that it is the role of the strategist to undertake this process.

Whilst all three participants differ in their approach, the outcome is the same. Smoothing allows for an alternate understanding of the data that enhances the meaning of the message being portrayed. Inherent in this is the role of the
strategist. I feel it is best summed up through a comment made by Theresa:
“You’ve got to make that judgement.”
Findings – Element Eleven: Enhancement

Rani struggled with the concept of enhancement. She was clear that the role of enhancement was to impart meaning for others, but it appears that she took enhancement to mean ‘pointing something out’ rather than the process of making something more ‘realistic’. For her, enhancement meant making sure that someone paid attention to something. It was a positive process, not one of allowing someone else to come to a desired outcome. She said the following:

RANI: Yeah. Ah look, I think enhancement is a really…I mean, it’s a…the ultimate skill of a…of an executive is to, um, identify the key drivers of something, they manage the most important points, the…I think there’s plenty of literature in management and business that says if it’s…this is an ultimate skill of a leader and an executive is to say, “When all is said and done, these are the key features of this map. These are the key things that really matter. We’re going to drive on this very straight road but, uh, here’s the steep hill, here’s the dangerous gulley, here’s where the kangaroos are going to jump out in front of you and here’s you, here’s your end goal. So distilling…distilling things down to the most important things…life’s too short, isn’t it, otherwise? [1/4/1003-1019] [EFL]

Sometimes it is difficult for strategic thinkers to recognise elements of their own thinking. In the following quote, Staci mentions how she hadn’t really thought about how she had done her thinking before, so it was hard for her to determine whether or not the particular element of ‘enhancement’ played a part. After we explored this a bit more, Staci agreed that she might, in fact, use enhancement. It was at this stage that Staci was beginning to fatigue. Her answers became shorter and it seemed more difficult for her to focus on the questions.
JASON: When you’re doing your…when you’re thinking about whatever it is that you’re thinking about into that future. Do you embellish those thoughts in order to be able to make them more realistic, in order to then, later on, be able to translate them into some sort of…document, I guess?

STACI: Don’t know. Don’t know. It’s a tough one. Because it means I need to deconstruct my thinking, which I haven’t really done. It just happens, I think.

JASON: Okay.

STACI: So I don’t know. [2/3][1045-1054]

...and then a bit later:

JASON: Alright. So considering they were talking about something in the future that doesn’t exist yet, is it fair to say that when you do this thinking…it’s not just purely abstract conceptual?

STACI: No.

JASON: That, you know, there’s this embellishment around it as well?

STACI: Yeah, that’s fair. [2/3/1074-1079]

Janelle used a wonderful example to demonstrate how she uses enhancement in order to get a strategic point across. Whilst discussing a projected contraction of American tourists visiting Australia, she resorted to enhancement to make her point clear:

JANELLE: Oprah Winfrey. You know, all of a sudden Tourism Australia got the opportunity to bring her out here and the states were falling over each other about where she could televise the show, whether it’d be in the red centre or Sydney Harbour or Fed Square in Melbourne and...“Can we get her to the Yarra Valley?” And I just watched this
thing physically near me, because staff near me were involved, and we had a joke that the cost was rising hour by hour. Yes, we could get helicopters to fly her to here and here. How many? Oh, you need x number of staff. Mmmm, okay. Three helicopters – yes, we can do that. As well as a grant that had to be given. And several times, I guess, I intervened and said to the Chief Executive, um, “This is a market that we predict will progressively fall. The US market will progressively fall, and particularly as the Australian dollar rises significantly (this is two years’ ago…and it’s certainly happened; it was certainly right that the Australian against the US dollar will rise and rise and rise), and the US economy, in a recession at the time. So I just kept saying to people, “In the long-term, it’s going to fall. In the short-term, it’s falling. If there’s thirteen or fourteen per cent unemployment in your street and you happen to be in work and you see For Sale signs up and down the street, the last you’re going to do for the next two years is take your family to the other side of the world. Even if Oprah thinks it’s a nice place! [4/4/345-353] [EFL]
Discussion – Element Eleven: Enhancement

‘Enhancement adds detail to give map symbols a more realistic appearance. Lines representing streams, for instance, might be given typical meander loops, whereas shorelines might be made to look more coast-like. Enhanced map symbols are more readily interpreted as well as more aesthetic’ (Monmonier 1996, p.27).

Enhancement is used as a mechanism for aiding interpretation of the message of the map, the aim being to reduce the cognitive load of the map-reader so that they can readily understand the elements on the map and draw conclusions from that.

The reason that some things on a map might get enhanced will be contextual. For example, in the following quote on ‘native maps’, Johnson explains how things that are significant may be enhanced as a mechanism for indicating something’s relative importance:

‘Native maps from different nations share some constant characteristics. Among these characteristics, most common are “round lakes, rivers drawn as straight or curved (not wavy) lines, slashes across the river lines to indicate portages, dots to show campsites and hunting areas, commemorative signs for raids and battles” (Belyea 141). These geographical indicators attest to the significance of both context and history in Native maps; rather than representing the earth to a standard scale—the goal of nearly all European mapmaking—Indigenous North American mapmakers focused on the cultural significance of the topographical features. A lake with cultural significance, for example, may be rendered larger than other bodies of water on the map in order to emphasize its importance; a creek that plays no part in the reason for the creation of a map may be omitted completely. One of the most common features in Native-made and Native-informed maps is the relatively straight alignment of natural features. This “straight-line mapping” (Fossett 113) or “linear coherence” (Belyea 141) characterizes both Inuit and sub-arctic North American Native mapmaking and suggests the degree to which relationships among geographical features and locations supersede mere representations of their existence on the ground. A full understanding of Native maps relies not on a European understanding of scientific geography but of the context—and the narrative—that accompanied each Native-made map.’ (Johnson, K 2008, p.107)
There has been speculation that the nature of the thing being mapped and how distinctive it is, is important for people to be able to recall and remember aspects of the map. In an attempt to discover whether it is the vividness/distinctiveness of the name of either the landmarks or the streets that allows people to remember landmarks better than street directions, Tom and Tversky (2012) were able to prove that it is not whether or not landmarks or streets were the subject of the mapping/memory test, but how vivid/distinctive the descriptions were to the subject that mattered. The importance of this research lies in the conclusion that when attempting to build mental spatial representations in others, it is in the best interest of the describer to be vivid and distinctive in their descriptions, since this aids associative learning.

Utilising mapping techniques that help the strategy to ‘stick’ more effectively makes sense. Furthermore, the ability to selectively choose which aspects of the strategy are described/mapped more vividly and those that are less vivid can help the map-maker to clarify in his or her own mind which are the important aspects of the strategy, thus helping the to improve their strategic thinking.

Rani regarded enhancement as a critical role of an executive. She thought that the ability to craft the data in such a way as to provide a coherent path for others to follow was crucial and that part of that process was ensuring that the most important information was highlighted. This is consistent with the participant’s earlier position, when she stated that it is important to be aware of all the data and that it is the skill of the executive to make sense of that data and to pay attention to the important aspects of it.

Staci struggled with this element. She eventually agreed that she probably did use enhancement, but her conclusions were far from convincing. This does, however, raise an interesting aspect about this research – sometimes people may do something and not be consciously aware of it because it is so well practiced that they have forgotten it is a deliberate action. At other times, strategists may do something but be unaware of it because they have never stopped to think about exactly how it is that they undertake their praxis.
Janelle was able to effectively demonstrate her grasp of the concept. Using an anecdote to enhance the meaning of data that predicted that inbound tourism from the United States was destined to fall, she managed to display a statistical analysis as a real-life event that got to the crux of the issue and highlighted the implications of committing spending to promoting tourism to a market that was predicted to fall. The use of imagery in this anecdote made the statistical analysis more realistic and facilitated clearer interpretation of the data.

As with the other elements, it is the skilful application of this element in conjunction with the others previously described that helps facilitate the strategist’s practice.
Summary

The preceding section outlined the eleven elements of maps that were identified as part of a wide-ranging literature review and that were also identified by the participants as being present in their strategic thinking praxis. Other elements were identified, but either they failed to be recognised by the participants as having a place in their praxis or the relationship was judged not to be strong enough to be included as part of the findings or discussion in this thesis.

This data clearly indicates a link between the epistemic elements of a maps and the day-to-day praxis of these managers when undertaking their Strategy-As-Practice. In this section, I have highlighted the data that was co-generated during the various interview phases and how this is related to the mapping element literature. In doing so, I have begun to build an argument that the two disciplines of cartography and Strategy-As-Practice may share some common ground when it comes to the epistemic machineries of knowledge creation.

In the next section, I seek to strengthen this argument and develop it further, suggesting that the various elements can be combined to form an epistemic technology of strategic thinking.
The case for a mapping epistemology

Not many of us would go through life without using a map of one kind or another, whether they be physical artefacts or mental/cognitive maps. The ability to make maps or map-like products develops early in childhood (Blaut et al. 2003), and furthermore it seems to be a cultural universal – in other words, it doesn’t seem to be a skill or knowledge restricted to the western hemisphere (Stea, Blaut & Stephens 1996). One perspective on this is that humans utilise such devices to lighten information load when operating in the environment (Sterelny 2006) and that we have been doing this for some time: ‘Pictorial representation is over 30,000 years old’ (p.7), and represents only one way in which we take information from the environment and transform it to make it easier to understand. Each situation calls for a unique approach and it is this ‘epistemic technology — building of tools for thinking, and altering the informational character of your environment — makes possible much that would otherwise be impossible’ (Sterelny 2006, p.19).

Empirical research has shown that even very young children are able to read and interact with maps without any prior instruction in their use. The evidence seems to indicate that the ability to use and understand maps ‘is somehow very fundamental in human development’ (Stea, Blaut & Stephens 1996, p.438). Indeed, in an empirical study by Blaut et al. (2003), they hypothesise that ‘preschool children in a number of cultures can, without training, read some kinds of map-like models and simulate map use. It seems likely that children everywhere, perhaps by their fourth birthday, can deal with map-like models’ (p.177).

The research indicates that with mapping (at least in the spatio-temporal aspect), ‘it seems very possible that maps are indeed made by adults across the entire range of contemporary cultures. As to the historical or phylogenetic dimension, enough evidence exists from enough places to confirm in principle the hypothesis that humanity was making maps prior to the invention of writing
and prior even to the Agricultural Revolution, with some evidence also suggesting origins in the Upper Paleolithic. It is not inconceivable that mapping, art, and grammatically complex language all emerged in the same epoch’ (Stea, Blaut & Stephens 1996, pp.352-53). So it seems that we have always mapped that which is important to us and furthermore that we are able to understand the maps of others and how they form a part of ‘their’ culture.

If this is true, then it is reasonable to assume that contemporary adults (managers, even) have at least a basic understanding of maps and how to use them. Even if the participants in this study have not utilised physical maps as part of their practice in strategic thinking and communication, it is reasonable to assume that with some appropriate scaffolding, they can quickly learn how to create, use and share such maps that could utilise the same syntactic properties as spatio-temporal maps.

The ability for managers to be able to ‘see’ how often abstract concepts or pieces of information relate to their concrete world is critical if they are to function in modern society. Fortunately, we often think of this as one of the key elements in cognitive (spatial) mapping and it seems that there is a term for this – correspondence:

‘Firstly, the ability to understand that a map or model is a representation of an actual environment, and this ability will be called the recognition of the correspondence between the representation and the environment.’

…and this:

‘The ability to recognize that one set of connected information (e.g. a map) has a relationship to a second set of connected information (e.g. an environment) is one aspect of analogical reasoning (Delaoche, 1989a), and Gentner (1983,1989) has proposed a theory of analogical reasoning which considers such reasoning in the following steps. Firstly a individual has to be aware of the relationship between two sets of information, and secondly, appropriate correspondences have to be noted between the two sets. Such correspondences can be in terms of what Getner refers to as ‘object’ attributes (e.g. if two items share common properties the analogy
between them can be based on those properties - ‘the sun is like a yellow ball’), or ‘relational’ attributes (e.g. when the emphasis is on the relationship between objects in the analogy - ‘the hydrogen atom is like the solar system’).’ (Blades 1991, p.85)

It’s reasonable to suggest that the second type of correspondence mentioned here is useful for managers when they do their strategic thinking. The ability to be able to take a concept, derive some correspondence with the ‘real’ world and then communicate how it ‘fits’ when articulating a strategy is an important skill, and it seems that it has clear applications in cartography (as there is a long history of maps being used to aid decision-making, particularly of the kind that involved strategy (for example, see Barber (1992)). I propose that this strengthens the argument that conflating strategic thinking with cartographic conceptualisations is an idea worthy of pursuit and it is this cartographic conceptualisation of strategy that is the epistemic technology in play.

The cultural universality of mapping and the ability to intuitively grasp map-making and map-reading skills is an important aspect in my choice of this area of research and how it overlaps with the praxis of managers. If a skill is inherently understandable, this potentially lowers the barrier to adoption of that skill. Thus, with a little bit of instruction and practice, managers may be able to become ‘quite good’ at being able to in the first instance conceptualise about maps and then in future iterations potentially create and use maps to help them with their strategic thinking, decision-making and communications.

This cultural universality (Stea, Blaut & Stephens 1996) of mapping also suggests that the processes to understanding a map are part of a larger social practice-complex (Chia & MacKay 2007). Maps can be about different things. They may have different content, but the ability to read maps (and proficiencies notwithstanding, make maps) is developed either through a conscious educative process or unconsciously through socialisation and experience.

As explained in more detail in my Methodology chapter, I have relied on this cultural universality to provide a common base from which to undertake this research. Starting with the assumption that managers will have some understanding of mapping, this research then focuses on determining whether
this knowledge can be used to further the ability of managers to make better strategic decisions by helping to uncover their strategic thinking processes. Thus my methodology is based on four main pillars of inquiry:

1. **To determine the experience that the managers already have with maps**
   This is where the specific experience of the managers is explored. Do they use maps? Have they used maps in their managerial practice? What do they understand when the topic of maps is brought up?

2. **To conceptualise maps and map use**
   This is where we get to the specifics of maps, map-making and map-reading, and really explore the parts of a map. This introduction to the main concepts of the maps is to help extend the managers’ understanding of how maps are put together and to help them to recognise the main parts of a map.

3. **To develop a critical appreciation of maps**
   Here, the managers are asked to critically evaluate maps and their own understanding of these maps. How do maps work? What makes them tick? Do maps support one agenda over others? Who wins and who loses when people use maps? How so?

4. **To explore the creative use of maps**
   Once the managers have explored the various aspects of maps and mapping, we explore how they might use them in their practice to further their strategic thinking, decision-making and communications.

The four pillars of this inquiry are based on the work of Kalantzis, Cope and The Learning By Design Project Group (2005), with particular reference to the knowledge processes as outlined in their Learning by Design Framework (pp.73-74). Here, they make the argument that good pedagogy is not tied to content, but rather that a good pedagogical approach can cope with whatever content is thrown at it and still help the student to have a transformative learning experience. Although Kalantzis et al. are writing about pedagogical issues, their
work can be adapted to help semi-structure a series of interview questions to develop a research participant's understanding of a potentially unfamiliar series of concepts and allow them to fully explore the potential of those concepts in relation to their own practice. For me, this meant that the nature of the interview schedules required me to have a coherent research approach and ensure that there was some logical progression in my semi-structured interviews. Time was precious to these senior managers. For more detail, see my Methodology chapter.

In the following section, I outline how the socialisation of mapping has led to a development of mapping practice and how that mapping practice can be understood in terms of the combinations of various elements of mapping (and consequently, maps).
Bringing the elements of the map together as an epistemic technology

‘As expertly produced, measured representations, such maps are conventionally taken to be stable, accurate, indisputable mirrors of reality, providing the logical basis for future decision making as well as the means for later projecting a designed plan back onto the ground.’ (Corner 1999, p.215)

So far in this thesis I have examined both mapping and Strategy-As-Practice in various dimensions, but the question still remains: Can maps and mapping help strategic thinkers in their praxis? I feel the answer is a qualified ‘yes’. As a direct, non-critical translation of mapping practices from cartography to strategic thinking, the link appears somewhat tenuous. Although mapping is a cultural universal and has been shown to exist across cultures and across time (Downs & Stea 1977), my research doesn’t conclusively indicate that thinking in terms of maps is how managers consciously approach their strategic thinking praxis. My research does show, however, that maps and mapping is a useful way to conceptualise a process of strategic thinking.

The Strategy-As-Practice literature shows that each episode of strategic thinking will be unique, shaped by wider social factors, influenced by the individual and her preferences and the situation under consideration. Just as the conventions of mapping allow any number of unique maps to be produced, constraining their production, but not their content, interpretation or ability to (re)present phenomena, the cartographic conventions can be adapted to form an epistemic technology for strategic thinking. This epistemic technology is not designed to be overlaid on data and blindly followed; it still requires the skill of the manager to actively shape the way in which the technology and the data interact with each other, but it becomes a guide for praxis (Whittington 2006) and a way for managers to interact with their thinking – turning it over in their minds and (re)presenting it in various ways (as was usual praxis of Staci and Theresa) in order to (re)make their internal representations into external representations (Portugali, J 2002).
When I initially began this research, I expected to have the various participants draw maps as a means of representing their thinking. It turned out that if I was to undertake this process, I would run the risk of focusing too much on the micro-practice of strategists in drawing maps, and as mentioned earlier, fall into the trap of focusing on the outcome (the map), rather than the process of mapping. Focusing on the ultra-micro level of the map and giving primacy to the map as an artefact would also mean that it would be difficult to justify how this praxis is linked to the wider ‘practice complexes’ that Chia and MacKay (2007, p.220) suggest are present and should form the basis of theoretical analysis. Of course, now recognising that as a limitation or a constraint on the direction of the research, it may still be a useful exercise to approach map-drawing (but through a different lens) as a means of eliciting managers’ understandings of their worlds (Sims & Doyle 1995). But the value in this research would be to constrain the research direction of the Strategy-As-Practice field, highlighting the dead-endedness of this approach – something which (Johnson, G et al. 2007) have previously warned us about.

The research in this thesis seeks to extend the understanding of how the underlying technology of mapping can help managers undertake strategic thinking. It is different to, say, cognitive sculpting (Sims & Doyle 1995) in that three-dimensional objects aren’t used, but it does share some underlying semblances in that, where the Sims and Doyle approach seeks to be very free-form, with little thought to structuring the interactions, the epistemic technology of mapping ensures that the process follows a familiar pattern. Due to the culturally-universal aspects of mapping, it may provide a way for people from different epistemic cultures to interact with a common language that may be able to foster understanding; in this way it is the technology of combination that allows for meaning to be made. Where the work of Sims and Doyle (1995) seeks to be explicitly additive, an epistemic technology of mapping as defined in this thesis embraces silences and subtractions as well, recognising that it is through the choices made by the managers in how they deploy the mapping metaphor that sets this approach apart.
Earlier, I defined each of the elements that make up one possible epistemic technology of maps. In the following sections, I discuss the implications of each of these elements in terms of the participants and the co-generated data. If you haven’t read the section, ‘The Elements of a Map’, now might be a good time to do so, for what comes hereafter rests heavily on it.

Before I launch into the discussion, however, I want to point out that exactly how maps work is a topic of much contention. For example, Robinson (1952) was firmly of the idea that maps were scientific devices and their purpose was to as accurately as possible represent that which exists in the real world; this is commonly thought of as the communication paradigm of cartography. For a long time, this modernist view of the map was the dominant position. Later, writers such as J.B. Harley attacked this worldview and sought to demonstrate that maps were embodiments of power relationships (e.g. Harley (1989), Harley (2001c), Harley & Woodward (1987) – a call that was taken up by others, in particular Dennis Wood and John Fels (2008), Wood & Fels (1992) and Wood, Fels & Krygier (2010), who make the point that we have moved beyond the idea that maps are exclusively a communication device and that the role of the map-maker is to accurately represent a given message with the least amount of distortion possible. They go on to assert that even the idea that maps have power (they do) has been settled, but that the real questions lie in trying to figure out exactly how maps work so that we can understand how that power is exerted.

MacEachren (1995) posits that there are three main perspectives that the scientific research tends to adopt when discussing map symbolisation and design, particularly within the communication paradigm. These are:

1. ‘…that a scientific approach to cartography is impractical or irrelevant, either …because cartography is an art rather than a science or because the rhetorical content of maps is more important than the information they contain’ and

2. ‘..the belief that the communication paradigm is the most promising approach to achieving cartography’s ultimate goal of more functional
maps, but that a combination of sloppy research, poor selection of initial problems to pursue, misdirected emphasis, wrong methods, and the relative youth of the approach has led to somewhat disappointing results thus far’ and

3. A perspective that ‘...accepts cartography’s function as creating interpretable graphic summaries of spatial information (i.e. representations) and the goal of producing more consistently functional maps, but judges the communication paradigm to be a much to constraining model for the discipline.’ [Emphasis in original.] (pp.11-12)

Ultimately, MacEachren exhorts: ‘My position is that there is no single correct scientific, or non-scientific, approach to how maps work’ [Emphasis in original.] (1995, p.12).

This research rests on the idea that the eleven identified cartographic elements can act together as an epistemic technology, but that this is not the only explanation possible for how maps work and how this might be useful for strategic thinkers. In this research I, like MacEachren, don’t claim to have found the one, single truth (it doesn’t exist), but rather have found that the empirical evidence appears to be useful in supporting a theory that aids our understanding of this phenomena.

So, with the above caveats in mind, I begin the final, concluding chapter by answering the research questions and then proposing a model of how the epistemic technology of strategic thinking might be arranged.
Conclusions

The following section represents the conclusions from the research process and a summary of the thesis findings.

I begin by revisiting the research questions and state how each of them have been answered. In doing this, I realise that the questions were all connected in a very subtle manner, one that I hadn't perceived when I proposed the questions at the beginning of this research. I feel that through gaining a deeper insight into the Strategy-As-Practice field, I have come to view the questions in a different light. I am looking for connections between micro- and macro-processes, something I'm sure the Strategy-As-Practice researchers would approve of. So I have chosen to answer the questions 'out of order', as I think it helps uncover some of the more subtle findings of this research.

After responding to the research questions, I revisit the model I have constructed as part of the research output. I contend that the model itself is only one representation of how the epistemic elements can be combined and that different combinations may lead to different insights. In the end, it is the epistemic technology that is important and any insights gained as an output of that technology are dependent on a careful consideration of the role of each of the epistemic elements and how they are arranged. The strategist is central to this process and since the strategist operates within a social world, the social world exerts forces (both visible and invisible) upon the process of epistemic arrangement.

Since the model is but one rendering of the research outcome, I next revisit some of the central arguments of the Strategy-As-Practice field and seek to see how this research output aligns with or contravenes some of the interests of Strategy-As-Practice researchers/practitioners. I indicate how I think this research adds to the Strategy-As-Practice field.

I believe that this research makes a contribution not only in terms of the Strategy-As-Practice field, but also in terms of methodological approaches to undertaking this kind of research. In this latter section, I outline what I feel those
contributions are and how I feel the methods that I employed are consistent with the Strategy-As-Practice perspective.

As is right and proper in a newly-developing field, there will be a plurality of views as to what constitutes appropriate research methods and methodologies when undertaking research about Strategy-As-Practice. In the sub-section on methodological limitations, I seek to anticipate and address some of those views. This research can be criticised on a number of different levels. Some may disagree with my approach and some may disagree with my findings. With regards to the methodology, I anticipate some of the concerns that may be expressed and explain how my research design sought to minimise those limitations. With the aid of hindsight, I suggest some other approaches that may prove to be superior to the ones I selected and enacted.

Finally, I offer some suggestions for future directions for this research. I indicate some of my near-term plans to build on this research specifically and also offer some scratches in the dirt as a part-map that others may wish to follow. I conclude by suggesting that even though this research has sought to fill in some of the detail of the map, that much is still to be done and it will be through and with the efforts of others that our understanding of Strategy-As-Practice will develop.
Answering the Research Questions

In this piece, I return to the research questions and draw some conclusions as to the contribution that this thesis makes towards the field of management and the sub-field of Strategy-As-Practice more particularly.

The research questions were:

1. Can cartographic conventions be used to help managers undertake strategy, and if so, how?
2. Can cartographic conventions help us to understand the strategic thinking processes of managers?
3. Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?

In answering the questions above, I wish to tackle them out of order, beginning with question two, followed by question three and then finally returning to question one.
Research Question Two

‘Can cartographic conventions help us to understand the strategic thinking processes of managers?’

Cartographic conventions form part of an epistemology of mapping. They are the foundations upon which cartographers base their social descriptions of the world, or as J.B. Harley writes:

‘There is, however, an alternative answer to the question “What is a map?” For historians an equally appropriate definition of a map is “a social construction of the world expressed through the medium of cartography.”’ (Harley 2001e, p.35)

The cartographic conventions that underpin the ‘medium of cartography’ have developed over thousands of years. From the earliest cave paintings to the most sophisticated computer renderings of the earth, the conventions of mapping that existed at the time shaped the way in which people (re)presented and understood their world. These epistemologies of mapping/knowing helped shape the social world within which people operated, and this in turn shaped their knowledge of what it was to ‘map’. Over time, these epistemic machineries of mapping became conventions and these helped form the epistemic culture of cartography.

Similarly, the research in the Strategy-As-Practice field – in particular the research surrounding the use of tools, frameworks and methodologies – rests on the socialised use of these epistemic machineries. The machineries of strategy sought to understand how the epistemic machineries of strategic tools shaped the social world of strategy making – the epistemic culture of strategy. (For a discussion on the use of models, tools and frameworks in the Strategy-As-Practice field, see the literature review chapter/Strategy-As-Practice overview specifically, cf. Kaplan & Jarzabkowski (2006))

The parallels are striking.

When the participants were asked to consider their own praxis in light of the cartographic conventions (in this thesis termed the ‘Elements of the Map’), each
of them was able to draw upon examples of how using the cartographic conventions could explain how they undertook aspects of their strategic thinking or strategy-making praxis. In the same way that the elements of the map come together to produce something meaningful, so the corresponding elements of strategic thinking come together to form a basis for strategy-making.

Although there appears to be correspondence between the cartographic conventions and the ways in which we can think about the strategic thinking processes of managers, in reality, recognising these links was not a straightforward process. In the interviews, the participants sometimes had to ‘reach’ for examples, or their discussions became circuitous and lengthy. In at least two occasions (Element Ten: Smoothing and Element Eleven: Enhancement) some of the participants didn’t have anything at all to say about the element we were discussing. For some of the other elements, the correspondence was immediate and obvious, and the participants had no trouble in drawing connections. It is difficult to know from the co-generated data why this was so. This offers, I think, an opportunity to extend the research to establish whether those elements that were more easily identified as corresponding with the thinking praxis of managers are used more frequently in their praxis.

Since the research has established that cartographic conventions can be a useful way to conceptualise the strategic thinking praxis of managers, other researchers may wish to build on this work by taking the various elements, working through their importance with managers and then working with them directly to develop specific combinations of epistemic machineries that may prove to be useful as ‘recipes’ for other managers to follow. Given the large number of elements and the moderating element of scale, the number of unique outcomes could potentially be very large. Some of the developed epistemic technologies will prove to be more useful and generalisable than others. This, I’m sure, would be of great interest to academics and practitioners.

For these reasons, I feel that the research question: ‘Can cartographic conventions help us to understand the strategic thinking processes of
managers? can be answered in the affirmative, but importantly, there is scope for much more work to be done in the area.
Research Question Three

‘Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?’

This research has shown that there is the potential for utilising strategic thinking elements in combination to achieve beneficial outcomes for managers. Indeed, the fact that the participants in the research come from very different personal and professional contexts, yet were able to find a way to explain how they already utilise the elements in their praxis, means that I am confident that if the research were extended into other contexts (e.g. different industries), managers in those areas would also find this useful.

It is timely, however, to offer a cautionary note.

Just as the Strategy-As-Practice agenda seeks to connect the micro-practices of individual (or groups of) managers with the macro-social and institutional forces that shape the field, it is worth remembering that this research was carried out in a particular location (Melbourne, Australia) at a particular time (2008-2012) and that the participants in the research are all actors within this particular social world.

The research of Blaut et al. (2003) and Stea, Blaut and Stephens (1996) points to the fact that mapping is a cultural and cognitive universal, but it is still unclear how well these concepts would translate to other, say, culturally different and/or international locations. It may be that the epistemic culture of mapping is so all-pervasive that the concepts would translate easily. Equally, it may be that other cultures may perceive key elements differently – for example, the element of ‘date’ can be thought of in terms of a particular date or point in time, or conceptualised as a temporal element. Some cultures appear to have a different approach to time, i.e. whether or not they have a long-term or short-term orientation (Hofstede 2013). It is unclear how this could affect the outcome of any practical theory that was developed.

I contend, though, that the model I propose is suitable for contextualisation. The epistemic technology of strategic thinking focuses on the ‘how’ of the
thinking, not on the ‘what’. The ‘what’ is an outcome, the ‘how’ a process, and if we are to accept that all processes are ultimately shaped by the social forces that make up our lifeworld, then this model is infinitely customisable.

Where trouble may exist could be in the translation process between individuals, and this may prove to be an area for further research.

All of the participants said that they worked in (at least sometimes) very collaborative ways. None of them claimed to undertake their strategic thinking praxis in a vacuum. The power of this epistemic technology of mapping/strategic thinking is that it forces managers to be explicit about the facts and data that they are considering, and how they manipulate these in order to arrive at their final outcomes. The model provides a language – a language that is easily understood, a language that may be a cultural universal and a language that can be shared, for discussing strategic decisions and strategic thinking amongst group members.

Each strategic episode will be unique and context-dependent, either at the individual (micro) level, the organisational (meso) level and at the institutional/social (macro) level. This model of epistemic technology of strategic thinking allows for unique contextualisation as it focuses on the process, not the outcome.

For these reasons, I feel that that the research question, ‘Can cartographic conventions aid in the development of a practical theory for strategists to employ in their strategic thinking praxis?’ can be answered in the affirmative, but that importantly, there is scope for much more work to be done in the area.
Research Question One

‘Can cartographic conventions be used to help managers undertake strategy, and if so, how?’

This question can only be answered in the light of the answers to the other research questions that have preceded it in this concluding section.

Research question two asked whether the cartographic conventions could help us to understand the strategic thinking practices of managers. Through empirically demonstrating that the participants in the research were all able to identify situations where they were able to see correspondence between their strategic thinking and the cartographic conventions as outlined in this thesis, this research was able to establish that these cartographic conventions are both useful and applicable.

Research question three asked whether the cartographic conventions could be used to develop a practical theory for strategists to employ in their strategic thinking praxis. This research has demonstrated that such a theory can be developed and that a model can be used to explain how the theory works. The theory takes into consideration the fact that strategic episodes will be context-dependent and that no two contexts will ever be exactly the same. The theory also seeks to link the micro-practices of managers with the larger (macro) social context.

So it is left to determine whether these conventions can actually be deployed in a strategic situation.

In the section ‘A model of a cartographically-informed epistemic technology’ I outline how such a deployment may be conceived. It was there that I outlined one possible application of the cartographic conventions to the strategic thinking praxis of a manager and in that case I demonstrated one possible combination of epistemic machineries into an epistemic technology of strategic thinking. It is clear that there are many other combinations that are possible, and it is also
clear that some may be more successful than others in aiding managers to undertake their strategic thinking praxis.

Much more research is required to understand the various ways in which managers may choose to combine these mapping elements to develop their own praxis.

For these reasons, I feel that the research question, ‘Can cartographic conventions be used to help managers undertake strategy, and if so, how?’ can tentatively be answered in the affirmative, but importantly, there is scope for much more work to be done in the area.
A model of a cartographically-informed epistemic technology for strategic thinking

In the Discussion section, I outlined the eleven elements of a map that seem to be useful for strategic thinkers. These elements can be thought of as pieces to a larger puzzle, or parts that together combine to make a larger machine – a machine of strategic thinking.

In this section, I explain how these elements can be brought together, utilised in such a way that, regardless of the context the strategic thinker finds themselves within, the combination of elements can help them undertake their strategic thinking.

In the following diagram, the mapping elements may be arranged as follows:
Figure 1: A model of the epistemic technology of strategic thinking
The model can be thought of as operating in three distinct but interrelated parts. First, there is the ‘what’ of the map. These include the following elements that essentially go to the heart of, ‘What is this map all about?’

These elements include (in no particular order):

- Title
- Frame
- Date
- Symbols
- Selection

The other group of elements are can be thought of as the ‘how’ of the map, and go to the heart of the question, ‘How does the map work?’

These elements include (again, in no particular order):

- Projection
- Simplification
- Displacement
- Smoothing
- Enhancement

Both of these groups of elements are mediated by a central, third element – that of map scale.

Map scale operates as a modifier of all the elements and the application of a different scale to each of these elements will have an impact on the way in which they either describe ((re)present) or behave. An important aspect to note is that all of these elements operate in a recursive loop, thus helping to answer the criticisms of researchers who call for more reflexivity in strategy research (e.g. Carter & Kornberger (2008; 2004), Chia (2004) and Pettigrew (2012)).
The model represents an epistemic technology – a layer of analysis that exists between Knorr Cetina’s (1999) conceptualisation of epistemic machineries and epistemic cultures (as discussed earlier in the section: Epistemic technology).

The epistemic cultures of cartography and those of strategic thinking are unique but my research seems to show that in the nuanced application of the epistemic machineries of cartography, strategic thinkers may be able to borrow and modify these machineries in order to better understand the process of strategic thinking.

Locating the model within the wider ‘practice complexes’ (Chia & MacKay 2007) of sociological research

The model deliberately indicates that the various epistemic elements are situated within wider social practices. This is represented by the dashed lines that act as a permeable frame for the model. As indicted in the literature review, the Strategy-As-Practice field is concerned with the connection of the micro-practices of strategy practitioners and the macro-sociological forces, in order to develop a more nuanced understanding of why and how strategy practitioners do what they do. This model specifically recognises that a strategy practitioner has a set of experiences that they rely on in their everyday practice, which may have been developed through personal insight or formal study. These experiences might also have been mediated by the larger social practices of ‘doing strategy’ within a larger cultural milieu. For example, strategy done in ‘the West’ is informed by a range of complex and subtle social norms and practices that may be different in ‘the East’. The model seeks to explicate this and remind the strategist that they are always operating within a wider experience field and that their micro-practices will have impacts on the organisation of which they are a part, as well as the fact that their micro-practices may ultimately pass into the wider macro-domain of accepted strategy practices.
An example of the model in use:

Imagine a manager has the need to undertake some strategic thinking – it doesn’t matter what the strategic thinking is about, it just matters that it needs to be done. Furthermore, imagine that the manager understands that the outcome of the thinking is high-stakes.

Applying the epistemic machineries of cartography (the map elements described above) to the problem may result in the following scenario:

First, the manager needs to have some sense of what it is that they are going to think about – here, the title becomes important. The title helps to narrow the focus down from ‘everything’ to ‘something’, providing content focus for the strategic thinking exercise. If, for example, the manager wishes to think about industrial relations, then this may exclude such things as petrol prices. Then the manager applies the moderating factor of scale to the topic: At what level of analysis does the manager want to think about industrial relations? Is the primary level of analysis going to be at a national, or local level? Is the manager really only thinking about how IR policy operates across the organisation or in a specific office or factory? Once this has been decided upon, the manager then looks to, say, the date as a further moderating element. When was the IR policy written? Is it still current? Does it comply with the laws of the government of the day? Will it be suitable in the near future? What historical antecedents have shaped current IR policy? Are they still relevant?

The manager uses this specific combination of elements to examine the issue of IR in a manner that is appropriate to their specific context.

The outcome of this process then feeds back into the original model again in a recursive manner – Has the imposition of a particular scale and the consideration of temporal aspects changed the nature of what was being considered in the first place? Does there need to be a change in the title to reflect this?

The important thing to remember here is that it doesn’t matter where the manager starts from – they could choose any of the elements and combine
them in any manner. The point is that this epistemic technology is customisable for the unique context of each manager, and is flexible and robust.

To demonstrate, let’s work through the model for another loop using the IR example used earlier. This time, let’s assume that the manger is happy with the title (the ‘what’) and also the scale and date of the data at which the issue is being considered. To extend her thinking, she would then work through the model again, choosing another element. In this example, let’s assume the manager chooses the element of ‘selection’. Selection of data is an important element as it is at the fundamental level of deciding what is going to be under consideration (shown on the map) and what is not. It is a process of positive discrimination of the data, but in making the selection, some data will necessarily be excluded or suppressed. The choice of the data to be selected or shown will be in part determined by the earlier decision on selecting a title (and thus providing a focus for the analysis). Questions as to which data is selected may revolve around issues of level of detail, quantum or the requirements for which the data will be used and (re)presented. Again, scale comes into play as a moderating force. If the scale selected is a large scale then the amount of detail that can be shown will be relatively small – however, it will be shown in fine detail. It will be up to the manager to determine at which scale she wishes the data to be shown, depending on her needs.

Once that scale has been determined, the manager then goes on to select one of the ‘how’ elements. In this instance, let us assume she chooses ‘projection’. Projection is really a matter of methodology. It is how the mapper chooses to transform the data so as to be able to (re)present it in a manner that can be ‘read’ by a map-reader. Projections, by their nature, tend to distort. In the mapping sense, a projection is a mathematical methodology for taking the spatial data as represented on a three-dimensional object (the Earth), and transforming and (re)presenting that on a two-dimensional plane.

The manager is required to think about how that projection may occur. What are the methods that she will use to take the raw data and then (re)present it in a manner that makes sense for her audience? What are the affordances of the
particular projection that she selects? In which ways does the projection distort the data? Can she live with that distortion or should another projection (methodology) be selected?

Once she is happy with the selection of projection, the data is then reconsidered in terms of the original selection. The model feeds the (re)presented data back into itself in a recursive manner, in a mechanism designed to allow the manager to see if she is satisfied with the outcome.

Importantly, it should be noted that any element can be chosen for this analysis, even elements that have been used before. Instead of choosing ‘projection’, the manager may again have decided that ‘date’ is the element that is important for the analysis. It is not necessary that the manager work through all of the elements in any particular order – indeed, she should stop when she feels that she has done enough – but the elements do provide a useful guide against which to test her thinking.

Where other conceptualisations of strategic thinking models have often concentrated on the ‘what’ of strategic thinking – particularly from writers who have argued that strategy is an analytical process – my conceptualisation of cartographically-informed strategic thinking is equally concerned with the way in which managers of strategy undertake their thinking, or more succinctly, the ‘how’ of strategic thinking.

It is this manner of combination of epistemic machineries that constitutes an epistemic technology of thinking.

It should be noted that this epistemic technology does not explain every aspect of strategic thinking and it is not necessarily a conclusive model. Other researchers may choose to investigate other map elements and their affect on the strategic thinking praxis of managers, and they may come to different conclusions. In this research, I have necessarily constrained the scope to those map elements that the literature regard as being the main elements (MacEachren (1995), Monmonier (1996), Wood & Fels (2008)). There is scope for research that builds on the work of Wood and Fells – in particular, their
conceptualisation of paramap and perimap (p.9) elements. An example of research that may examine the perimap elements of strategic thinking could be the way in which relevant news broadcasts impact on the analysis of managers undertaking strategic thinking. This kind of research might also provide insight into the ‘how’ of strategic thinking and may prove to be fertile ground for future study.
Strategy-As-Practice conclusions

The Strategy-As-Practice field has a lot to offer those who are interested in management and strategic management in particular. By examining strategy-making with a sociological eye, researchers and practitioners can become more aware of the invisible forces at play. The Strategy-As-Practice field is concerned with understanding how the micro, meso and macro activities of strategy practices are connected and how they influence each other. The literature oscillates between understanding the micro-practices of managers and struggling with understanding how the larger social forces are at work in the Strategy-As-Practice field.

My proposed model of an epistemic technology of strategic thinking seeks to unite the micro, meso and macro levels of analysis that the Strategy-As-Practice field is interested in.

The micro

The model accounts for how the strategist can go about thinking. It specifically relies on the cartographic literature and the elements of a map to help a strategist make meaning (a (re)-presentation) of phenomena within their lifeworld. Each element suggests a way of thinking. Some are suggestive of what the manager should think about (e.g. the title), whilst others are suggestive of how the manager should think about their data (e.g. the date). This application of the model helps guide the strategist through the thinking process. The strategist has to make specific, conscious decisions about what they think about and the way in which they think. This promotes a more reflexive understanding of the phenomena under question. Choices about the way in which the elements are combined will be in part mediated by the organisation’s existing strategy, and in this way the micro-practices of the strategist are intimately linked to the meso level (organisational level) strategy.
The meso

The strategist, when undertaking thinking about the strategy of the organisation within which they work, modifies their thinking about the organisation-level strategy through the application of some or all of the epistemic elements. The strategist is thinking about the title in the context of the existing strategy. A change in title may well lead to a change in the organisation’s strategy, or at least in the way in which that strategy is conceptualised by members of the organisation. When using these elements to guide their thinking, the strategist taps into the language of mapping and the language of strategy-making. In explaining why a particular element has an impact on the organisation’s strategy, the strategist begins to spread a language of thinking. In explaining the way in which the elements informed the strategist’s thinking, the strategist is making a direct link between their own praxis and the organisation’s strategy. This satisfies the criteria of connecting the micro to the meso levels of Strategy-As-Practice.

The macro

Utilising the elements of a map as a way of designing an epistemic technology of thinking taps into the cultural universality of maps (Stea, Blaut & Stephens 1996) and offers a mechanism through which strategists (and others) can understand their social world. As the mediating element of scale comes into play, the organisation begins to occupy a place on a much larger map. Forces that are much larger (and which may be invisible to the organisation) can become visible when a smaller scale is applied to the analysis. Once the strategist is aware of these invisible forces, they can act in ways to try and shape them (or at least understand how they impact on the organisation and the strategist themselves), thus tentatively fulfilling the criteria of connecting the micro and macro levels of Strategy-As-Practice.
Methodological Conclusions

One of the strong contributions of this thesis is, I believe, the utilisation of Wagner’s (1997) co-learning agreements, combined with the Learning by Design framework (Kalantzis, Cope & The Learning By Design Project Group 2005) to guide the data co-generation phase of this research. These methods were selected for two interrelated reasons:

1. The reason that I was undertaking this research was to gain a greater understanding of how senior managers undertook their strategic thinking praxis. I started from a low base. I didn’t (and couldn’t) know in advance what the answers were going to be. When working from within a constructivist ontology, I had to recognise that as we were undertaking the discussions about our lifeworlds, we were simultaneously constructing these lifeworlds. I could only ever be sure about my own interpretation of my own lifeworld and since I had entered into a relationship with others (at which point our lifeworlds collided and began to inform each others’), I could expect my lifeworld to change. It didn’t seem appropriate for me to take a position of ‘observer’ in the process. How could I stand removed from it? How could I keep my lifeworld unchanged and from that vantage point examine the lifeworld of another? What right did I have to do that? I had asked the participants to give me a glimpse into their lifeworlds (or at least part of them) and as participants in this research, we were agreeing to co-construct our understanding about how our lifeworlds worked. Anything less than a sharing of that responsibility would be, to my mind, unethical. Wagner’s co-learning agreements provided a solution to this dilemma. By agreeing that each person involved in the data co-generation phases had something to offer due to the very fact that their lifeworlds were different, it levelled out any power differential in the relationships. Whilst I may know a little more about maps than they do, they may know a little more about strategy than me. Together, we explore a space where we see if we can shed a more light onto our own understandings of our lifeworlds and together offer
what we know to others. Wagner’s co-learning agreements allowed us to adopt those roles and act as equals in the research process.

2. Prior to the first round of data-co-generation, I was unsure exactly how much experience the participants had with maps or with the kind of research I was seeking to undertake. I was unsure how sophisticated their knowledge was on the various mapping constructs and whether their knowledge of maps was similar to mine. If it was similar, then we could progress through these phases rather quickly, but if it wasn’t, we would need to spend some time understanding what the mapping literature had to say about maps and then seeking to understand whether there was correspondence between this and the lifeworld experiences of the participants. If we were going to enter the research arrangement as co-learners, it made sense that a learning framework guide the research. The Learning by Design framework (Kalantzis, Cope & The Learning By Design Project Group 2005) provided this structure. By beginning with the participants’ experiences, each of us could gain a sense of what we knew and what we didn’t. The framework is non-prescriptive in that there is no set hierarchy of actions to carry out, nor any set path to follow. The learning experience is driven by the interaction between the participants and the framework provides a way to think about how to structure what is happening in the moment in relation to desired educational outcomes. Importantly, the framework is silent on what needs to be taught and instead guides users to interact with it to contextualise learning, depending on the phenomena of interest and the skills, knowledge and attributes of participants. This, then, provided a structure around the co-learning activities that we were undertaking and allowed the data-co-generation to occur within an overall design that sought to generate enough data to be able to draw some conclusions.

Combining these two approaches allowed the research to develop in relation to the strengths of the various participants. Personal insights from one participant could be used in subsequent interviews with other participants in
order to clarify understandings and perspectives and develop a richer understanding of the lifeworlds of the participants. Data co-generated in an early session could be checked again later under different conditions to see whether there had been a change in the way that the participants now viewed their strategic thinking praxis. I could use my knowledge and experience with the literature to investigate and compare what the literature had to say about maps, mapping and strategy with what the participants had to say about it. I could bring my experiences into the discussions in an effort to co-construct meaning with the participants.

I found that the combination of adopting the role of co-participant in the data co-generation phases of the research and also that of research designer through the application of the Learning by Design framework allowed me to become reflexive about my interventions in the research. This reflexivity prompted questions of influence and made me re-examine my various roles within the research project very carefully. Now, as I set out to disseminate the findings from this research into the wider Strategy-As-Practice community (and, hopefully, beyond), I am aware that the contribution to methodology may be much more significant contribution than I first thought. If other researchers decide to take up this approach, it will strengthen what is seen as a weakness in the Strategy-As-Practice field: a dearth of appropriate research methods that at once seek to combine the micro-analysis of individual practices of practitioners with the wider, social forces which surround them.
Methodological limitations

It takes time. This approach involves investing a lot of time away from the data co-generation phases in order to understand what the participants are saying and then to build that back into the next phase of data co-generation. When analysing the co-generated data of one participant, this is not so bad, but when you begin to cross-reference the data co-generated with other participants, the process can become unwieldy and time-consuming. As a researcher, I quickly saw the amount of data and possible combinations of experience explode. In reaction to this, I sought to limit the questions and direction of the sessions to a pre-determined set of elements as informed by the literature. This put an artificial boundary around the research (or, if you like, a ‘frame’). With more time, it might be possible to discover finer, more nuanced readings of the data.

It takes experience. Applying the Learning by Design framework is not easy to do in the middle of an interview, on-the-fly, as it were. I found it to be mentally taxing to figure out what question to ask next, or which contribution to make to the discussion in order to delve deeper into the data co-generation. I had used the Learning by Design framework in another role as a teacher, so I was familiar with it and could assess the contributions that were being made by the participants in that context, but ultimately it came down to a judgement call – did I have enough data (and of the right kind) that I could move the discussion onto another point? Should I cease a line of enquiry because it didn’t look to be producing anything of relevance? Or should I let the conversation evolve further in the hope that something new will emerge? Whilst these questions can also be levelled at other methodological approaches, the Learning by Design framework seeks to guide learning activities in a particular way and knowing which activity to engage in at a particular moment in time takes experience.

Applying *a priori* codes to the data analysis may mean that some insights are left unexamined. The use of a constructivist ontological position and then the adoption of a co-generation approach to the data phases requires participants to become aware that they bring previous experience and
knowledge to the research process. It seems nonsensical to expect that either of us would ‘bracket out’ that previous experience either in the co-generation phase or in the analysis phase. Consequentially, even though this approach of explicitly relying on each other’s experience helps build a much richer data set, it also constrains the analysis. We can only see the data we have generated through the lenses that we have born of our experiences. Others, with different sets of experience, may be able to analyse the data and find other insights if they were to apply their different *a priori* codes.

Ultimately in this thesis, the most I can claim is to say: “This is what we found”.
What I could have done better

It wasn’t until I had completed the first round of interviews and sent the transcripts back to the participants to review, that I realised that even though I espoused a methodological position that was based on the idea of co-learning agreements (Wagner 1997) – for a discussion of this approach, see the Methodology section – and even though all of the participants expressed a wish to be actively involved in the research, I wasn’t doing what I said I would.

A co-learning agreement (Wagner 1997) seeks to bring the researcher and the participants together to, in effect, undertake co-research. One of the stated features of a co-learning agreement is that it helps break down the roles between participant and researcher as meaning is negotiated. To a certain degree, we constructed meaning in the moment and to that end, we fulfilled the idea that Wagner intended in his co-learning agreements. However, there was another step in the meaning-making process that, upon reflection, I had excluded the participants from. After each data co-generation session, I would go away and analyse and code the data. In effect, this meant that I constructed another level of meaning and then reported it to the participants, who then had an opportunity to respond. Although we were co-learners, we weren’t co-researchers because we weren’t part of a formalised research team. The participants didn’t have the opportunity to search for the themes in their research or to help negotiate the meaning.

There are some structural reasons for this. The participants were all very busy managers and they had limited time to spend undertaking the research. Indeed, during the very first interview, our session was interrupted when a colleague of Rani’s knocked on the door to draw her attention to a breaking story in the press about their organisation. Rani had to attend to the issue as it was unfolding and politely called for the ending of proceedings. Even though this participant described their job as one involving a long-term perspective, it was evident to see that they were also required to be reactive at a moment’s notice. Co-developing the themes and codes for the interviews would also have
meant that the interviews would have had to have been conducted, then transcribed, and then another appointment made for the interviewer and research participant to sit down and undertake the co-coding process. Creating codes and understanding themes from the transcription is an intensely time-intensive exercise. On average, for every hour of audio data that was transcribed, I spent between 15 and 25 hours developing and reviewing codes. The research participants would not have been willing to dedicate such time to the research process – potentially weeks of solid work. As each participant was invited to undertake the research and they were informed that there would be no payment for their time, it was unlikely that they would agree to such time impositions.

Upon completion of this research, it may be that each of the participants may indeed be willing to explore further the phenomena that we were exploring, but that would involve a new research design and a different set of commitments by all parties.

In undertaking future research in this area, I would probably design my methods in such a way that I would only follow one participant over a much longer period of time, using multiple methods of generating data and a research methodology more informed by an action research perspective (as can be found in, say, Reason and Bradbury (2006) or, as pointed out by Samara-Fredericks (2003), an ethnomethodology-informed ethnographic study may be more suitable for researching in the Strategy-As-Practice field.

However, I think it is worth stating that all of the participants in the research at one time or another commented on how the research process had been beneficial to them, even if it only gave them pause to reflect on their praxis. Certainly these are senior people in their organisations and all had undergone further education and training, either executive-level training through their organisation or more formal, Master’s level postgraduate education through Australian universities. They were probably used to reflecting on their praxis anyway – but it was nice to hear it.
What next? From epistemic technology to concretised reality

Maps as transitional devices/translation devices

Throughout this research, I have drawn many maps as a means of trying to understand the underlying epistemic technology of mapping. I have found that in the drawing of my maps I have had the occasion to slow down, to consider each pen-stroke and each decision, in terms of what I have learned through my reading and what I have co-discovered through my interviews with each of the participants. The drawing of these maps has been both enlightening and frustrating. As an intellectual pursuit, mapping important strategic thinking episodes has allowed me to reflect deeply upon my own praxis. Finding the time, however, to engage fully in the practice has been challenging. Nevertheless, in each instance where I have managed to carve out some time, I have come away feeling clearer and more comfortable with any decision that is to be made subsequently.

I believe that maps (which are the product of the epistemic technology of mapping) can aid in the reflective practice of managers, particularly when we consider the fact that managers seem to barely have enough time to do their job, let alone take time to critically reflect on their own practice. A map can be a tool that allows them to reclaim some of this time, both helping them to undertake thoughtful planning and also slow them down enough to engage in reflective practice. The map also represents an artefact of the work of strategic thinking. But for the map to be useful and for it to be widely adopted in management circles, it needs to demonstrate that the time it takes to use as a tool delivers other, more significant benefits. ‘Tools, by definition, help us to perform tasks more efficiently, speedily, or both. The power of reflective tools and processes comes from their ability to encourage managers to stand back from what is happening, and to examine their personal thinking’ (Gray 2007, p.498). By emphasising the epistemic machineries (Knorr Cetina 1999) of map-making/thinking and combining them into a technology of thinking/knowing, the
epistemic technology of map-making can also aid in helping managers to become more reflective. Choices become deliberate in determining which elements of the map are to be used and in which manner. The mapper has to think about the process of making those decisions, and it is this reflexive act that can help managers to improve their own understanding not only of the phenomena under investigation, but their own practices of strategic thinking.

The process of drawing the maps helped deepen my understanding of each of the elements, so much so that towards the end, I was able to ‘see’ these elements in discussions I was having with colleagues. My sensitivity to the elements became heightened.

In one conversation, a colleague was discussing the future role that she saw for her organisational unit. In what seemed to be a throwaway comment, she mentioned another, minor project that she wished to undertake. The utterance was no more than three or four sentences and she quickly moved back onto the original topic, but at the time I was struck by the thought that what I had just witnessed was an example of the mapping element of ‘graphic association’. Here, she needed to find a way to draw my attention to something that was important, but that by itself may have seemed unconnected to the discussion we were having. Notwithstanding that it was a verbal version of graphic association, I did, in fact, pay attention to it and looked to see what would happen over time. Months later, it became clear that the ‘minor project’ was beginning to eat up more and more of her time and resources and that it was becoming strategically significant for the future of her organisational unit. The use of the epistemic machinery of graphic association utilised as part of an epistemic technology of mapping allowed me to interpret her ‘map’ correctly. I have no doubt that it was only through the deep engagement with the topic, my constant drawing of maps and a reflective approach to what I was learning and co-discovering that allowed me to ‘see’ this in the moment. I had become experienced at drawing and reading maps.

One of the challenges that mapping as a tool has to answer is that the amount of time that it takes to complete a map may be seen as a waste. In the
writing of this thesis, I tried to make many maps as a way of being able to
externalise the abstract conceptualisations that I was making in the text. I even
complained about my inability to engage with this practice in an email to one of
my supervisors: “I’m also thinking about how (or if) I might draw a map for each
section. It’s on my to-do list to begin that practice, but I can’t seem to justify it
when words still have to be written. I know I don’t want to be doing it all at the
very end. I’m happy to draw many maps and then refine, but it’s the time
investment that I’m struggling with (strangely, I don’t think of this as ‘work’)”
(Downs, J 2012). For management mapping to be taken up as a practice, the
value of the process will need to be seen as greater than the time it takes to
learn the techniques involved and to actually produce the maps.

This, I think will form the basis of my future research agenda. This thesis has
been about understanding how the epistemic technology of mapping can inform
strategic thinking practice. In doing so I have had to constantly remind myself
that it is the technology that I am interested in, not so much the final artefact.
Herein lies the rub. It turns out that it is really only the broadest of
conceptualisation of mapping that is needed in order for managers to begin to
make their maps. With a rudimentary grasp of mapping conventions, most
people would be able to draw a map. As mentioned before, mapping is thought
to be a cognitive and cultural universal (Blaut et al. 2003), so it shouldn’t be too
much of a stretch to believe that anyone would be able to draw at least a
rudimentary map. The judgement of the author will determine how well they
think the map serves as an act of representation of their ideas.

And herein lies one of the greatest challenges for the mapper – taking an
abstract idea and representing that in what Tufte (1990) would call ‘flatland’ –
two-dimensional space. It is possible, however. This challenge has been faced
before by innumerable mappers. Indeed, it faces all cartographers who try and
represent something at such a scale that that which is unable to be perceived
by the human senses:

‘Beyond its technical aspects and its cultural contexts, the history of
small-scale cartography deals with this challenge: giving a material
reality to something that human senses cannot grasp and providing this graphical device with a symbolic power, a social (and political) authority and an intellectual (or spiritual) efficiency. Any map is an interface - pragmatic, cognitive metaphysical - between its users and the world that surrounds them. Those who look at it and who share the scientific, semiological keys to its understanding are assumed to concur that they look at something beyond the drawing itself. As an optical as well as intellectual prothesis, maps allow human senses and the human mind to achieve a new level of reality. Maps are impossible without such a shared belief about the materiality and the reality of the world they display, about the claim of the drawing to stand as a substitute for this world, more accessible to study than the reality itself. Even if a map is criticized, corrected and completed, its power as a representation is never denied.’ (Jacob 1999, pp.24-25)

And whilst Jacob here was referring to the mapping of geographic space, the same challenge of representing the invisible applies to management mappers when they try and represent their idea-space – even if they are unaware that they are doing so.

In his book, *The Reflective Practitioner*, Schon (1983) talks about how knowledge can be translated from the tacit to the explicit, but that it is not always easy to understand how. Often, the only way to determine that the knowledge exists is to observe it in the moment of action. It may not always be clear to the person carrying out an action exactly how it is that they know how to do it, but the fact that they can do it shows that they do have that knowledge.

The same may be said for my participants – how they undertake their strategic thinking may not be known to them, yet they (apparently) are able to do it in their practice. This research shows that for these participants, it is possible to conceptualise their strategic thinking practices as map-making.

The next step in my research will be to ask participants to engage in the physical act of map-making. The maps that I will ask them to consider (and hopefully, draw) may act as ‘transitional devices’ between thinking and action, affording the thinker a language to use in order to slow down and consider all aspects in a more formal way. Over time, a body of work may develop – a record that will allow the map-maker to go back and look at previous work (and not have to rely on, say, memory). Thus the maps serve three purposes:
1. To slow down the process of thinking to allow a better quality of decisions to emerge.

2. To support practice (on-going development) by providing an artefact and a growing body of knowledge to reflect about in order to inform current (in-action) practice and future practice.

3. To ‘concretise’ the decision-making process thus allowing the strategic thinker to make appropriate decisions.

The mapping encourages strategic thinkers to be both reflexive (in the moment) while also providing a basis for further, sustained, reflection. The maps also provide a historical artefact that the strategic thinker can refer back to. This provides something upon which the strategic thinker can reflect, facilitating assessment of his or her own development over time.

As well as being a transitional device, mapping may also prove to be a transformative process. By being made explicit, the map offers a snapshot in time and allows the thinker to be able to draw out their current thinking and ask questions, e.g. Is this map similar to other maps that I have drawn in similar contexts? If so, does this represent a by-the-numbers approach to thinking? Does drawing the map in a similar way mean that my thinking is trapped in what I believe will always work, or does this still allow room for experimentation? Am I drawing the map this way because I have always done it so? What would happen if I were to change something? Anything?

This one map will allow the practitioner to think about the here-and-now of the decision that they are making, but over time, a body of work will grow, and the ‘unit of time’ that is relevant to the practitioner when reflecting on their performance will lengthen.

Schon (1983) explains it thus:

'A practitioner’s reflection-in-action may not be very rapid. It is bounded by the “action-present,” the one of time in which action can still make a difference to the situation. The action-present may stretch
over minutes, hours, days, or even weeks or months, depending on the pace of activity and the situational boundaries that are characteristic of the practice. Within the give-and-take of courtroom behaviour, for example, a lawyer’s reflection-in-action may take place in seconds; but when the context is that of an antitrust case that drags on over years, reflection-in-action may proceed in leisurely fashion over the course of several months. An orchestra conductor may think of a single performance as a unit of practice, but in another sense a whole season is his unit. The pace and duration of episodes of reflection-in-action vary with the pace and duration of the situations or practice.’ (p.62)

Gray (2007) invokes Hoyrup (1996) when he talks about the ability of reflective practice to be transformational for a manager: ‘Management learning can be enhanced, however, by proactive critical reflectivity – the surfacing and critiquing of tacit or taken-for-granted assumptions and beliefs. This takes place through the dialectical relationship between reflection and action in which reflection is the precursor to action, but the process of action leads to further thinking and reflective processes’ (p.496).

I believe that managers who understand the epistemic technology of map-making and who then undertake the physical act of mapping will allow this process to be concretised. The physical act of drawing the map will provide the space needed for reflective practice to occur. Furthermore, the drawing of a map encourages the mapper to be more critical of their own thinking and to engage with the process more fully.

This answers, in part, some of the criticisms of the Strategy-As-Practice research agenda – practitioners become reflexive about their practice, understanding their role within the strategy formation processes and within the larger practices complexes (Chia & MacKay 2007) within which they operate, whilst at the same time the research can satisfy the needs of practitioners in more deeply understanding how to apply the research in a practical way (Cunliffe 2002).

Maps and mapping may prove to be a very valuable link between the abstract conceptualisation that occurs in managers’ heads and the enactment of that conceptualisation through the decision-making process. Maps can help
concretise the decision-making process. By making the map-maker consciously consider each aspect of describing the strategic thinking process and the decisions involved, it can make the process more ‘real’ for them.

This concretisation is not to be confused with prescription. The aim is not to prescribe how a strategic thinker needs to undertake their thinking, but rather to make them more aware of the way in which they undertake their thinking. The uses of the ‘elements of a map’ are for the unique, individual and contextual situations that a strategic thinker finds themselves in.

In this section, I have sought to develop a direction for my future research in helping managers to understand the epistemic technology of mapping and to help them to draw their own maps. However, it doesn't take much imagination to see that this is not necessarily the only way forward, and that other approaches may be effective also.

In the first instance, the practitioner can use these elements to reflect on the way in which they are thinking about the phenomena of interest – essentially just conceptualising the problem with the aid of the map elements, but without committing to drawing one. Another use of the elements might be to stimulate conversation between actors, which may help to socialise a common understanding of how the phenomena is to be viewed. This use of the elements in a social setting such as a meeting may mean that the elements don’t get used as originally intended/theorised, since each participant may have a different understanding of what the elements are and their theoretical basis, or just choose to use them in a manner that suits their needs at the time (Jarzabkowski 2004).

A potential path forward

One of the potential paths forward for this research is for Strategy-As-Practice researchers to take up some of the methodological challenges posed in the Cambridge Handbook of Strategy As Practice (Golsorkhi et al. 2010), particularly drawing on the methodological approach of ethnography. A long-term, deep engagement inside an organisational context where managers are
involved in strategy-making would provide a rich environment to test whether the elements I have identified here can be recognised in other contexts. Even beginning with an a priori understanding of what the elements of the epistemic machineries of strategy making are, it may be difficult at first to recognise them in action. It will be through repeated exposure and careful analysis that the patterns, I predict, will appear. This research has demonstrated that even though the managers could recognise the elements in their own thinking ex post facto, the elements were either so well socialised that they were unable to be recognised by the participants, or mapping is such a powerful cultural and cognitive universal (Blaut, Stea & Spencer 2003) that once the similarities between what the managers were doing and the identified elements of the maps were highlighted, they became easily recognisable.
A final postscript: The map is not the endpoint

Although the literature and the interactions with the participants provided a significant level of stimulation for thinking through the role that maps can play in helping managers to understand and reflect upon their strategic thinking practices, it wasn’t until very late in the project that I had what I feel to be a key insight – one that revealed my own deeply-held personal beliefs about maps and how they work. The insight was that ‘maps are not the endpoint’.

I had unconsciously been hanging onto the idea that the map is always of something, that it was a representation of something that already exists and that the quality of the map is a function of how well it represents that thing/phenomena/idea. Even when I began this research, I had thought that it would be a good thing to have the participants draw maps as a way of reporting their strategic thinking. The map was to be the final representation, the endpoint, the data.

Even throughout the data collection phase of the research, where the participants shared with me their strategic thinking practices, I began to recognise a self-bias towards thinking that Staci and Theresa were more likely to actually draw something than to mentally conceptualise a map. I thought that because these participants showed a pre-disposition to drawing, the data generated in these sessions was somehow more relevant, accurate – more right – than the data co-generated with Rani and Janelle. This was not the case.

Even though I had been drawing my own maps throughout the project and even though I had recognised that it was the process of drawing that was important and that the final artistic quality mattered less than I thought, I still nevertheless judged the quality of my thinking as a function of the final map that was drawn. I couldn’t separate the process of thinking and conceptualising away from the final result of a drawn map even though they are distinctly separate things.

Carter and Kornberger (2004) would argue that I am a victim of the ‘Cartesian split’ (p.21) that has dominated Western thinking and that in
particular plagues strategy-making. The idea here is that a hierarchy exists between the mind and the body: ‘While the body is mere res extensa, thinking happens in the res cogitans, in the mind strictly divided from the body. This hierarchical relation became the driving force behind Western thinking’ (p.22). It is this split that trapped me – the map I produced became the thing that framed my thinking. The process would look something like this: I would think about whatever it was I was thinking about and then I would try and draw a map of it – first the mind then the body – and then I would revisit the thinking as a result of the drawing that I had made. Even though this was a recursive act and I felt at the time that it helped me to refine my thinking, the map became the thing that ended up driving my thinking; I became part of a loop that I only understood one part of, unthinkingly being driven by that part I could ‘see’. This became even more evident as time progressed. If I look back at some of the early maps I drew, it is not difficult to remember what I was thinking at the time (as imperfect as that recall may be), but I find it nearly impossible to recall what I was thinking after I had finished the map and was reflecting on my efforts.

Time doesn’t stop once the map is drawn. Things keep moving, thoughts keep evolving, events keep happening. This is possibly one of the faults of the map-making praxis; as soon as the map is drawn it becomes a historical document. Without a conscious effort to interpret the map as a historical document given the existing context and having regard to the things that may have changed since it was produced, the map can trap thinking, becoming the focal point, whereas the processes involved in drawing the map are what is important and should be the focus of attention.

I suppose that I shouldn’t be surprised that this is the case. The dominant classical view of cognitivism would hold that our internal understanding of the world is guided by ‘…a manipulation of stored internal representations’ (Portugali, J 2002, p.429), in much the same way as a computer works. The movement between what Portugali (1996; 2002) refers to as ‘internal representations’ and ‘external representations’ is described as being part of a synergistic inter-representation network:
According to IRN, the cognitive system in general, and the one associated with cognitive maps in particular, extend beyond the individual’s mind/brain into the external environment. This is so in the sense that the cognitive system is a network composed of internal and external representations. Internal representations refer to entities constructed by the brain that represent information of the external environment, while external representations to entities constructed by means of humans’ mimetic, linguistic and artifact-making capabilities that represent information generated by the mind/brain. External representations are, therefore, the product of the ability of humans to externally represent ideas, emotions, thoughts and so on.” (Portugali 2002, p.428)

Thus when I draw a map, this external representation becomes a reference point for my internal representations of how the world works. The map that I draw updates my understanding of how the world works, so no wonder I found it so hard to move beyond the map and not think of it as an endpoint. It is, however, only a physical manifestation of cognitive processes that are constantly in flux. Having been exposed to this classical model of thinking and unconsciously subscribing to it meant that finding another way to think about the way in which my understanding of the world worked was difficult. It became increasingly important that I find a way to be able to recognise and understand the parts of the loop – the network – that I was experiencing and the impacts of each of these. Being able to do this helped me to become more reflexive about the kinds of activities I was undertaking and the impact that they had on my thinking.

This is, unsurprisingly, aligned with the research methodology of constructivist Grounded Theory (Charmaz 2005), which places an emphasis on a reflexive position being undertaken by the researcher (see Methodology section, for a description of this). Becoming more aware of the kinds of thinking and actions that I was undertaking allowed me to become more attuned to details in the data that could point to something other than the obvious conclusions. This became important in the analysis of the data. I had to stop looking at the map and instead look for evidence of the processes of map-making (or map cognition) to explain what was going on.
However, there was another problem that I had to overcome – that of detailing what it was that strategists actually do (Jarzabkowski, Balogun & Seidl 2007) – whilst having regard to the fact that the written word is hopelessly inadequate as a means of epistemologically engaging with the acts of practice. In fact, this is one of the criticisms levelled at the Strategy-As-Practice field (Chia & MacKay 2007). Here, Chia reflects the positions of Carter and Kornberger (2004) and Portugali (2002) in rejecting the dominant dualistic idea of the Cartesian Split and calling for a more integrative understanding of how actors operate within the (social) world.

‘The value of a resource depends not on its existence but on its utilization.’ (Johnson, G, Melin & Whittington 2003, p.7)

Ultimately, this can be said for strategic thinking. This research has tried not to uncover whether or not strategic thinking exists in each of the participants – it was taken by virtue of their senior positions in the organisations that it did – but tried to uncover a way for managers who may have the ‘ability’, but not the skill, to understand how strategic thinking can work. This leads to the next obvious question: Can a manager be trained in strategic thinking?

This is exactly the question that Liedtka (1998) asks in her Long Range Planning article ‘Strategic thinking: can it be taught?’ In it, she sets about trying to define what strategic thinking is, positioning her definition alongside Mintzberg’s (1994) and Stacey’s (1992) as encompassing skills that involve intuition, creativity and synthesis. Referring back to the Hoskisson et al. (1999) article which evokes the imagery of a swinging pendulum to describe the state of strategy research, Lietka’s position is closer to the internal perspective than the external perspective. This is not surprising given the time in which she wrote the article. There had been something of a rush after the publishing of Porter’s articles and books (1979, 1980, 1981, 1985, 1996) towards undertaking research within the macro-economic tradition, focused mostly on large-scale organisations and using quantitative research methodologies, and she was railing against this. Seeking to bring the research focus back to what can be described as a practitioner level, Liedtke bemoans the fact that most definitions
are overly broad, perpetuate the idea that ‘strategic thinking is incompatible with strategic planning as we know it’ (1998, p.121) and that there exists a gulf between the creative and analytical aspects of strategy – a theme echoed later by Carter and Kornberger (2004) when they called for the Strategy-As-Practice Agenda to address such gaps.

Leidtka’s (1998) work focuses on the strategic thinker being in possession of five attributes – being a good system thinker, intent-focused, willing to engage in intelligent opportunism, able to think in time and working in a hypothesis-driven mode. Whilst these elements provide some direction towards the characteristics that are needed of strategic thinkers, they essentially amount to a laundry list of ‘things’ that strategic thinkers need to be good at, thus reinforcing Johnson, Melin and Whittington (2003) when they say ‘The value of a resource depends not on its existence but on its utilization’ (p.7). Liedtka is essentially saying that the test of a good strategic thinker is how well they can demonstrate skills in the five elements that she identifies through the use of various tools and techniques. This is the part that can, presumably, be trained. However, what she misses is that whilst her descriptions of activities undertaken together point to someone who can be recognised as a good strategic thinker, she doesn’t elaborate on how to be better. How do you think better, not do things better either alone, or as she suggests, in conjunction?

In response to the criticism that definitions of strategic thinking tend to focus on what strategic thinking is not, Liedtka does provide a description of some of the promise of strategists who can think, and whilst I may disagree that it is the combination of application of ‘creativity’ and tools and frameworks (all rolled up into the five elements she describes), I was struck by the following:

‘In an ideal world, strategic thinking individuals, armed with a diverse toolkit of concepts, frameworks, and techniques and sharing a common language and literacy, would appear on the doorsteps of the firm, sprung fully formed like Venus from the sea, ready to take over the management of the strategic issues they faced. Each would select from the toolkit those concepts best suited to their own contexts.’ [Emphasis added.] (1998, p.127)
This is where I think the value of the mapping metaphor and the eleven elements that I have identified as already existing within the practice of the participants can aid managers to improve the ‘how’ of their strategic thinking.

Earlier in the mapping literature, I indicated how mapping can be thought of as a cultural universal (Stea, Blaut & Stephens 1996) that managers can be presumed to already have – so they have the ‘what’ of the mapping metaphor, but just need to learn the ‘how’ and figure out how to apply it in their own contexts. Thus the emphasised section in Lietdka’s quote above shows that the skills of mapping are already culturally embedded in the managers and provide a ‘common language and literacy’ upon which they can draw in relation to their own contexts. One of the main tasks that remains is to help managers develop the lexicon to describe what they already know and so that they can communicate effectively with each other.

In describing their affinity with the processual tradition in strategy research, Johnson, Melin and Whittington (2003) make the point that even though this research agenda ‘…has irrevocably opened the black box of the organization’ (p.10), it also has some shortcomings, not the least of which is that process research tells us ‘…a good deal about the overall processes of organizational decision-making and organizational change, but it has been less interested in the practical activity and tools necessary to make these processes happen. What managers actually do, and with what techniques, is left obscure’ (pp.11-12). This research addresses this issue by uncovering a thinking structure that appears to exist and which can lead to a greater understanding at the micro-level of how thinking is done and how it might affect organisational actions. It therefore provides an antidote to the processual school’s seeming predisposition to concentrate on the organisational level – particularly with ‘strategic change or decision making processes’ (p.12) and will be useful for managers who are in the thick of strategising, providing a framework for understanding how their individual thinking can influence organisational outcomes and how a shift in scale can connect the day-to-day work of the strategist with the wider, social practice complexes within which they operate.
This research offers the eleven map-making elements as an open-ended scaffold for individuals and teams to think and plan strategically (together) without ever prescribing either process or 'content'. At the same time, these elements offer a shared professional language for describing and understanding Strategy-As-Practice. They will function as enablers of clearer, more thoroughly thought-through and explicit strategy for thinking/making 'out loud'.
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Appendix 1

Ethics Approval

Ref: Ethics Appl. 743

Tuesday, December 2 2008

Jason Downs
School of Management
College of Business
RMIT University

Dear Jason,

I am pleased to advise that your application for ethics approval for a Research Project has been approved by the Chair of the Business Portfolio Human Research Ethics Sub-Committee. Approval has been granted for the period from 2 December 2008 to 5 March 2012.

The RMIT Human Research Ethics Committee (HREC) requires the submission of Annual and Final reports. These reports should be forwarded to the Business Portfolio Human Research Ethics Sub-Committee Secretary. Annual Reports are due in December for applications submitted prior to September in the year concerned. I have enclosed a copy of the Annual/ Final report form for your convenience. Please note that this form also incorporates a request for extension of approval, if required.

Best wishes for your research.

Yours sincerely

Prue Lamont
Secretary
Business Portfolio Human Research Ethics Sub-Committee

Encl.
Notice of Extension of Ethics Approval

Date: 04 April 2012
Project Number: 743
Project Title: Strategic Thinking: An Investigation
Risk Classification: Low Risk
Principal Investigator: Jason Downs
Supervisor: Associate Professor Carlene Boucher

Project Extension Approved From: 06 March 2012 To: 03 March 2016

Terms of approval:

1. Responsibilities of the principal investigator
   It is the responsibility of the principal investigator to ensure that all other investigators and staff on a project are aware of the terms of approval and to ensure that the project is conducted as approved by BCHEAN. Approval is only valid while the investigator holds a position at RMIT University.

2. Amendments
   Approval must be sought from BCHEAN to amend any aspect of a project including approved documents. To apply for an amendment submit a request for amendment form to the BCHEAN secretary. This form is available on the Human Research Ethics Committee (HREC) website. Amendments must not be implemented without first gaining approval from BCHEAN.

3. Adverse events
   You should notify BCHEAN immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.

4. Participant Information and Consent Form (PICF)
   The PICF must be distributed to all research participants, where relevant, and the consent form is to be retained and stored by the investigator. The PICF must contain the RMIT University logo and a complaints clause including the above project number.

5. Annual reports
   Continued approval of this project is dependent on the submission of an annual report.

6. Final report
   A final report must be provided at the conclusion of the project. BCHEAN must be notified if the project is discontinued before the expected date of completion.

7. Monitoring
   Projects may be subject to an audit or any other form of monitoring by BCHEAN at any time.

8. Retention and storage of data
   The investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

Regards,

Professor Roslyn Russell
Chairperson
RMIT BCHEAN
Plain Language Statement

INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

PROJECT INFORMATION STATEMENT

Project Title:
Strategic Thinking: An Investigation

Investigator:

- Mr Jason Downs, B.Bus (Property), MBL, (PhD Candidate, School of Management, RMIT University, jason.downs@rmit.edu.au, ph: 03 9925-5113.)

Supervisors:

- Associate Professor Carlene Boucher (Project Supervisor: Associate Professor, School of Management, RMIT University, carlene.boucher@rmit.edu.au, ph: 03 9925-5914)
- Dr. Peter Burrows (Project Supervisor: Research Fellow, Global Studies, Social Science & Planning, RMIT University, peter.burrows@rmit.edu.au, ph: 03 9925-572

Dear XXXX,

You are invited to participate in a research project being conducted by RMIT University. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate. If you have any questions about the project, please ask the investigator or one of the supervisors.

Who is involved in this research project? Why is it being conducted?

This research is being conducted by Jason Downs, B.Bus (Property), MBL, a PhD (Management) candidate from the School of Management at RMIT University, Melbourne, Australia.

The supervisors for this study are:

- Associate Professor Carlene Boucher, BA (Melb), GradDipChgDev (RMIT), MA, PhD (Fielding), School of Management, RMIT University, and,
- Dr Peter Burrows, M.Bus, PhD (RMIT), Research Fellow, Global Studies, Social Science & Planning, RMIT University.

This study has been approved by the RMIT human Research Ethics Committee, and is not being funded by any outside bodies.
Why have you been approached?

You have been approached to participate in this study as you have been identified as falling into one of the four following categories:

☐ You have been recommended as someone who often displays qualities normally associated with strategic thinking by a mutual acquaintance, or;
☒ You are in an organisational role that involves you making strategic decisions, or;
☒ You have been selected based on information gathered from public sources (e.g. websites, newspapers, journals) that indicate that you seem to display qualities normally associated with strategic thinking, or;
☐ You are personally known to the investigator as the type of person who often displays qualities normally associated with strategic thinking.

What is the project about? What are the questions being addressed?

This study seeks to determine the answer to the following questions:

1. Can the process of strategic thinking be identified and replicated?
2. Are there any common practices, processes or thinking patterns that Australian managers use when undertaking strategic thinking?
3. How does strategic thinking inform the strategic decision making of managers in Australian organisations?
4. Can a unifying model of strategic thinking be designed in order to aid Australian managers to improve their strategic thinking practices?

You will be part of a group of research participants that will be between 6 and 8 members in size. It is not anticipated that you will meet any of the other research participants as part of this research project.

If I agree to participate, what will I be required to do?

In order to answer these research questions you will be invited to keep a record of your experiences about strategic thinking in your organisation.

Primarily, you will be asked to record your own experiences of strategic thinking and to reflect on your practice. As the methodology of this study seeks to uncover ‘the truth’ of your practice, you will also be asked to undertake some analysis of your data in conjunction with the researcher. How you record your data will be determined by you, however, periodically we will meet for approximately 90 minutes where I will conduct a recorded interview in which I will ask you about your experiences, reflections and learning. These recorded interviews and your self-generated data will form the primary data that will be analysed later.

The analysis will be conducted using qualitative research methods in which the researcher tries to uncover themes from the data from which inferences about meaning can be made. In total you will be required to record your data for a period of eighteen
months and you will be required to attend six interviews (each approximately 12 weeks apart).

**What are the risks or disadvantages associated with participation?**

There are no direct risks associated with this study. Your details will be kept securely and only available to yourself, the researcher and the supervisors for this project. Your data will be de-identified before any publication and your data will be kept securely on RMIT servers (if in electronic form) and in a locked filing cabinet in the office of the researcher (if in physical form). All data will be securely destroyed after a period of five years.

The requirements of the study include that you take some time to record, reflect and analyse your experience with strategic thinking. How and when you do this is up to you, however, you should be aware that this may be a time consuming exercise depending on your choice of method and the frequency that you decide to collect and record your experiences, thoughts and learnings. This time commitment can be minimized by using simple strategies such as “doing a little bit every day”, rather than trying to sit down and recollect your thoughts, feelings, experiences and practice in a less frequent manner. The researcher will help you to identify the best strategies for data collection that suit your individual manner of working and lifestyle.

You may be exposed to different methods of data collection including the use of such things as journals, private webblogs, photography, videography, cartography and other arts-based forms of enquiry. Initially this may feel strange to you, however, you will be supported with initial training and the provision of materials where possible. For example if you chose to undertake your data collection and reflections via a private and secure webblog, the researcher would set up this private blog on your behalf and instruct you in its use. Should you choose to collect your data in a traditional journal format, then the researcher would provide you with materials that allow you to do so (e.g. a notebook/sketchpad etc.). If you choose to allow images of yourself to be collected, then you will be required to complete a consent form (attached as an appendix to this plain language statement).

Depending on the level of reflection and self analysis and assessment that you currently undertake about your own praxis, you may find that by potentially intensifying this practice of self reflection and analysis that you become aware of personal traits that you may have either been unwilling to confront, or were unaware of previously. Although this is anticipated as being unlikely, this may lead to some psychological distress. In order to minimize this risk, we can provide you with contact details of qualified counsellors or psychologists who you may wish to consult for support. One such service is Lifeline (ph: 13 11 14).

At all times, should you wish to withdraw from the study, you are able to do so immediately and without prejudice.

If you are unduly concerned about your responses to any of the interviews or if you find participation in the project distressing, you should contact either Jason Downs or Associate Professor Carlene Boucher or Dr Peter Burrows as soon as convenient. Jason
and/or Carlene and/or Peter will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary.

**What are the benefits associated with participation?**

Should you choose to participate, there are some direct and indirect benefits that may accrue as a result of your participation.

As this study is trying to identify the process of strategic thinking and how, if possible, to improve it, you will naturally be spending some time thinking about your current practice. This may lead to personal value judgments about the efficacy and effectiveness of your current practice and you may seek to try and improve it.

Should you so desire, you will be presented with a copy of the final thesis and you will be entitled to copies of any publications that arise from it. I would be happy to forward these to you.

**What will happen to the information I provide?**

The data that you provide will be held in confidence and will only be available to the investigator, and the supervisors. Your personal contact details will not be disclosed or available to anyone else other than the principle investigator (Jason Downs) or the supervisors. This data will only be used for the normal purposes of enabling contact. It will not form part of the research output.

You will be de-identified as part of the research. The data collected will be analysed and aggregated with data form other research participants. Any results will be published in a gender neutral manner and all references to actual places of work, or any other information that may be used to identify participants will be removed or coded in such a way that the privacy of all participants will be guaranteed.

All hard data will be kept in a locked filing cabinet and soft data in a password protected computer in the office of the Investigator in the School of Management at RMIT University. Data will be saved on the University Network System where practicable (as the system provides a high level of manageable security and data integrity, can provide secure remote access, and is backed up on a regular basis). Only the Investigator and supervisors will have access to the data.

The data will be retained for 5 years upon completion of the project after which time paper records will be shredded and placed in a security recycle bin and electronic data will be deleted/destroyed in a secure manner.

Any information that you provide can be disclosed only if (1) it is to protect you or others from harm, (2) a court order is produced, or (3) you provide the researchers with written permission.

Results from the study will initially be published in a Doctoral Thesis, a copy of which will be held by the Investigator and at RMIT University Library.
Subsequently, papers may be produced for publication in journals, conference proceedings and in other media. The results of the research will be aggregated and all participants will be de-identified so that there is no chance that any of the research participants, or their organisations, can be identified.

**What are my rights as a participant?**

Your rights as a participant include:

- The right to withdraw your participation at any time, without prejudice.
- The right to have any unprocessed data withdrawn and destroyed, provided it can be reliably identified, and provided that so doing does not increase the risk for you, the participant.
- The right to have any questions answered at any time.
- The right to access your own data at anytime.

**Whom should I contact if I have any questions?**

Should you have any questions, you should contact any of the following people who will be able to deal with your questions confidentially and provide further information or advice should you require or request it.

- Mr Jason Downs, B.Bus (Property), MBL, (PhD Candidate, School of Management, RMIT University, jason.downs@rmit.edu.au, ph: 03 9925-5113)
- Associate Professor Carlene Boucher (Project Supervisor: School of Management, RMIT University, carlene.boucher@rmit.edu.au, ph: 03 9925-5914)
- Dr. Peter Burrows (Project Supervisor: Research Fellow, Global Studies, Social Science & Planning, RMIT University, peter.burrows@rmit.edu.au, ph: 03 9925-572)

1)

**What other issues should I be aware of before deciding whether to participate?**

There are no other issues that could materially affect you choice to participate in this study.

Yours Sincerely

Jason Downs,
B.Bus (Property), MBL.
PhD (Management) Candidate

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Any complaints about your participation in this project may be directed to the Secretary, College of Business Human Research Ethics Sub Committee, Business College, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 5594 or email address rdu@rmit.edu.au. Details of the complaints procedure are available from http://www.rmit.edu.au/rd/hrec_complaints
Participation Consent Form

RMIT HUMAN RESEARCH ETHICS COMMITTEE

Prescribed Consent Form for Persons Participating In Research Projects Involving Interviews, Questionnaires, Focus Groups or Disclosure of Personal Information

PORTFOLIO OF
SCHOOL OF
Name of Participant:

Project Title:

Strategic Thinking: An Investigation

Name(s) of Investigators:        (1) Jason Downs
Phone: 03 9925 5113

(2) Carlene Boucher
Phone: 03 9925 5914

(3) Peter Burrows
Phone: 03 9925 2572

1. I have received a statement explaining the interview/questionnaire involved in this project.
2. I consent to participate in the above project, the particulars of which - including details of the interviews or questionnaires - have been explained to me.
4. I authorise the investigator or his or her assistant to interview me or administer a questionnaire.
5. I give my permission to be audio taped: ☐ Yes ☐ No
6. I give my permission for my name or identity to be used: ☐ Yes ☐ No
6. I acknowledge that:

   (a) Having read the Plain Language Statement, I agree to the general purpose, methods and demands of the study.
   (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied.
   (c) The project is for the purpose of research and/or teaching. It may not be of direct benefit to me.
   (d) The privacy of the information I provide will be safeguarded. However should information of a private nature need to be disclosed for moral, clinical or legal reasons, I will be given an opportunity to negotiate the terms of this disclosure.
   If I participate in a focus group I understand that whilst all participants will be asked to keep the conversation confidential, the researcher cannot guarantee that other participants will do this.
   (e) The security of the research data is assured during and after completion of the study. The data collected during the study may be published, and a report of the project outcomes will be provided to __________ (researcher to specify). Any information which may be used to identify me will not be used unless I have given my permission (see point 5).

Participant’s Consent

Name: ________________________________ Date: __________________

(Participant)

Name: ________________________________ Date: __________________

(Witness to signature)

Where participant is under 18 years of age:

I consent to the participation of ________________________________ in the above project.

Signature: (1) ____________________________ Date: __________________

(Signatures of parents or guardians)

Name: ________________________________ Date: __________________

(Witness to signature)
Participants should be given a photocopy of this consent form after it has been signed.

Any complaints about your participation in this project may be directed to the Chair, College of Business Human Research Ethics Sub-Committee, Business College, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 5594 or email address rdu@rmit.edu.au. Details of the complaints procedure are available from: http://www.rmit.edu.au/rd/hrec_complaints
Photography Consent Form

Appendix – Photography Consent Form

Prescribed Consent Form for Use in Research Projects Involving the Taking and Recording of Personal Images of Participants (Photos and Videos)

<table>
<thead>
<tr>
<th>College/Portfolio</th>
<th>Business</th>
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<tbody>
<tr>
<td>School of</td>
<td>Management</td>
</tr>
<tr>
<td>Name of participant:</td>
<td></td>
</tr>
<tr>
<td>Project Title:</td>
<td>Strategic thinking: An Investigation</td>
</tr>
<tr>
<td>Name(s) of investigators:</td>
<td>Phone:</td>
</tr>
<tr>
<td>(1) Jason Downs</td>
<td>(03) 9925 5113</td>
</tr>
<tr>
<td>(2) Carlene Boucher</td>
<td>(03) 9925 5914</td>
</tr>
<tr>
<td>(3) Peter Burrows</td>
<td>(03) 9925 2572</td>
</tr>
</tbody>
</table>

1. I have received a statement explaining the recording of my image for the above project.

2. I consent to participate in the above project, the particulars of which—including details of the recording of images—have been explained to me verbally and in the written project description.

3. I authorise the investigator or his or her assistant to record images of me.

4. I understand that:
   - I am giving consent to have my image taken for the purpose of Data Collection and further analysis
   - That not all taken images will be used in this project
   - That I am giving permission to have my image taken

   □ But any identifying features must be disguised

   ... or ...

   □ My personal image will be published or presented without any attempt made to disguise my identity
   - That my image will be taken

   □ But my personal image may be altered when published
   ... or ...

   □ My personal image may not be altered or used out-of-context without my approval

These images will be published in a report/thesis/project to RMIT University.
Any used or unused personal images from this project will be destroyed upon completion of the project, including electronic images, which shall be deleted.
I am free to withdraw from the project at any time and to withdraw images of me that have been previously supplied prior to any publication of the report.
The project is for the purpose of research. It may not be of direct benefit to me.
Unless otherwise agreed copyright for a resultant image will remain with the main investigator in this project.

Participant’s Consent

| Participant:       | |
|--------------------| (Signature) |
Participants should be given a photocopy of this consent form after it has been signed.

Any complaints about your participation in this project may be directed to the Chair, College of Business Human Research Ethics Sub-Committee, Business College, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 5594 or email address rdu@rmit.edu.au. Details of the complaints procedure are available from: http://www.rmit.edu.au/rd/hrec_complaints

Details of the complaints procedure are available from the above address.