The Social Life of the Computer in Ramingining

Anthea Vida Nicholls
BSc (London), Dip Ed (Ballarat), MASTS (Deakin)

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School of Education
Charles Darwin University
Darwin NT, Australia
Declaration

I hereby declare that the work herein, now submitted as a thesis for the degree of Doctor of Philosophy at Charles Darwin University, is the result of my own investigations, and all references to ideas and work of other researchers have been specifically acknowledged.

I hereby certify that the work embodied in this thesis has not already been accepted in substance for any degree, and is not being currently submitted in candidature for any other degree.

Signature of Candidate

Date
Abstract

This thesis is the outcome of eighteen months of fieldwork in Ramingining - an Indigenous town in Arnhem Land, Australia - during 2006-2008, after four years of my living there as a teacher. It was made possible by the generous participation of the Yolngu people of Ramingining, in the relationships which are the subject of this thesis. Within these relationships, I paid particular attention to one actor: the computer. I asked, How is the computer living here?

In the thesis I trace my living and working in Ramingining, with people and with computers and other objects, as an observer and as an intervener. I also trace my engagement with the research literature around material semiotics, particularly Actor Network Theory (ANT) and its subsequent developments. I show that this work - and its material, social and textual participants - became actants in turn in the story that subsequently unfolded in Ramingining. The thesis enacts a mutual, revealing interrogation between ANT and this story.

I found that as a ‘material semiotic’ toolkit, Actor Network Theory enabled me to encounter the complexity (which it also predicted I would find) in Ramingining and to follow some significant actors: Yolngu endeavouring to use computers to get access to bank accounts, myself searching for a place to live, Yolngu computer access places emerging and disappearing, statistics revealing and hiding other actors, some ‘Balandas behaving badly’, and always, computers .. working out their own salvation while Yolngu endeavoured to negotiate the complexities of the sociotechnical world in which they now find themselves.

As ANT predicted, I also found that when things happened, or didn’t, actors were being held by strong ties and breaking weak ones; I watched networks being built and undone. I documented something of the huge amount of work - usually hidden - which holds things in place. I found that ‘ontological choreography’ was necessary to recognise some things which didn’t behave like networks - in whose terms they were merely messes - and so to encounter them creatively.

In this manner, I also found a way to talk about ‘goods’; to address the question of how developers and researchers might behave in an Indigenous town.

Then in the end I allowed the computer to speak, and to tell its own story.
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- Finally, I dedicate this thesis to the memory of my mother, Phyllis Nicholls, and my teacher/friend, Eric Magnusson, both of whom passed away before I could put it in their hands and remind them of the many ways they contributed to its existence. Mum, Eric .. that would have given me so much joy. You would both have been so outrageously proud!
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Prologue

In 1999 I was completing a Masters degree in a part of the academy with the engaging title ‘Science Technology Society’ and I was looking for a research project. The course work had exposed me to questions and challenges (and sometimes accounts of tragedies) which had arisen in the borders between Indigenous knowledge practices and their western counterparts, particularly western medicine. Maybe I could find a topic in there? I knew someone who knew someone who worked in Maningrida in Arnhem Land in the Northern Territory. I followed the trail and met a thoroughly surprising suggestion. What about the story of the telephone in a place like Maningrida? I nearly fell off my chair at the computer screen. I’d never been interested in that sort of technology.

But the idea grew on me, and especially its logic. Who would talk to a stranger about sensitive medical issues? And who in a remote community hasn’t got a great telephone story to tell? In June that year I collected some of these stories in Maningrida and duly finished my degree.¹ But while in the Northern Territory I also did relief teaching in both Maningrida and Ramingining and in July 2001 I returned to Ramingining, following a trail I had laid back in 1999. I worked in the school for four and half years, first as a classroom teacher, and then as a literacy coordinator.

But back in 2001, just as I was heading to Ramingining, the teacher I was replacing sent me a small newspaper clipping. Charles Darwin University was looking for participants to trial a new online Language Course. This teacher confided that one of her regrets in leaving Ramingining was not having studied any of the local languages. I applied to be one of the participants in the trial.²

This teacher then gave me another gift. It was a proxy introduction to a Yolngu elder. His name was Yambal Durrurrnga, and he became my mentor and friend. He also became my ŋapipi, but I will come to that. Yambal told me he’d been wanting

¹ Nicholls (1999), 'The Social Life of the Telephone in Maningrida'.
² At the time I was also reading Trudgen (2000), Why Warriors Lie Down and Die. It stated emphatically that Yolngu wanted Balanda to come to Ramingining so long as they did certain things, including learning local languages, and staying for significant lengths of time.
to write stories for some time and something in our friendship catalysed their beginning. Over the next six years he wrote - in one of his own languages - and I typed up these stories. We then edited them together over many hours, spread over the years, in conversations which always drove us back to paper and pens, dictionaries, whiteboards, Toyotas and ultimately computers.

I left Ramingining in December 2005, on six months study leave. During this time I enrolled in this PhD program and began again to expose myself to the academy. Thus, when I returned to Ramingining in June 2006, I was no longer there as a teacher in the school. Nor was I a member of one of the two main groups of people who live there. I was neither Yolngu nor a Balanda public servant.

I had moreover, returned to a remote part of Australia. The town of Ramingining lies twenty-five kilometres inland from that bit of the coast of northeast Arnhem Land which is locally called ‘the barge landing’. The barge brings weekly supplies of fuel, food, and heavy goods for the town. For people, the trip from Darwin is either an expensive series of flights in several planes - successively decreasing in size - or a long road trip. It is five hundred and sixty kilometres if the rivers aren’t up; eight hundred kilometres via Katherine if they are (Figure 1).

The town has a rich cultural demographic (Appendix 1). Six hundred and fifty of its seven hundred residents represent the Indigenous peoples of north east Arnhem Land. The town itself was built on the land of the Djadiwitjibi clan; a Yirritja clan within the Djinang language nation. There are also many other Djinang language clans that have estates close to Ramingining. Most of the peoples, however, who live in Ramingining today have traditional estates along the Woolen River and the Hutchinson Strait and in Buckingham Bay. They are mostly Yolngu people who speak languages in the Dhuwala and Dhuwal language groups. The most widely spoken languages are Gupapuyngu in the Dhuwala group and Djambarpuynngu in the

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3 Balanda = white person of European origin.
4 The correct pronunciation and spelling is Ramangiṉiŋiŋ, but given the ubiquitous usage of the common spelling, even by Yolngu, I have reluctantly chosen to use it. See Appendix 2 and Chapter 2 for notes on orthography.
5 They may however feel close to this area through their gurruṯu (kinship) relationships. For example they may call this country their ṣāndji country, meaning their mother’s country, their māri country,
Dhuwal group, with the latter fast becoming a *lingua franca* for Eastern Arnhem Land.

*Dhuwal* and *duwala* represent the words for ‘this’ or ‘here’ in these languages, while the word for ‘person’ is Yolngu (or using the orthography of the region, *Yolŋu*). This word now also means ‘the Yolngu people of North East Arnhem Land’, while *Yolŋu Matha* refers to the large group of languages spoken there. Djinang people do not identify as *Yolŋu*, and while they respond to the term, the correct address is *Yulŋi*.\(^6\)

But I was neither *Yolŋu* nor *Yulŋi*. As one of approximately fifty Balanda I was neither a public servant in one of the government institutions nor a contractor employed by them. I was no longer a Balanda teacher, and I wasn’t a nurse, mechanic, builder, accountant or manager. I was a researcher and there was no government housing for researchers.

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meaning the country for their mother’s mother, etc. For these reasons they find it disconcerting when Balandas say they are not from Ramingining.

\(^6\) Notes made by Matthew O’Reilly in personal communication.
From June to November 2006 I lived in five different houses, minding dogs and house sitting for Balandas who were away, or being allowed to temporarily occupy a vacant house. The packing up of my work each time I had to move and the physical pull of the boxes towards the earth as I lugged them in and out of cars - and once ferried them over a high fence as I moved next door - became a problem.

It was accompanied by another similar problem. Just as there was limited housing for people who didn’t fit into well rehearsed roles, there were also few public spaces for the activities my work would encourage.

The research project which I had presented to the Community Council was prosaically called ‘The Ramingining Computer Project’. It had its roots in my telephone study in Maningrida but it had grown up in the years I had lived in the town and watched a growing dependency of Yolngu people on Balandas, for services which were in turn dependent on computers. As communications, businesses, education and employment opportunities and financial transactions in the modern world became increasingly embedded with computers and internet technologies, Yolngu people were experiencing a new wave of dependency on Balandas.7

Moreover, when I returned to Ramingining in June 2006 there was only one semi-public point of computer access in the town. This was in the Women’s Centre, which in turn was an initiative managed by the Community Council. Incredibly, another large space which used to house a library and several public computers had been closed for two years, pending a move into this building by the Council. The Council was at that time working out of a derelict building which was hovering between condemnation and redemption. Plans to relocate to the library building were stalled by indecision as to just how the old building should be replaced. Should it start from scratch or involve renovations? Meanwhile the large public space which the library had represented, along with rooms which had once housed adult education by Batchelor Institute, were shut up and the phone lines which would have made reopening them easy, were in limbo.

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7 Bandias also notes this lack of access and consequent dependency and tensions in the remote community of Milikapiti in September 2005. Bandias (2006), 'The Challenges of Servicing Diverse Community Environments: Five case Studies from the Northern Territory'.

4
Ramingining Computer Project

Anthea Nicholls, Bulanydjan, has come back to Ramingining on Study Leave. She is now a student at Charles Darwin University. Her course is a research degree and she would like her research to be a benefit to Ramingining Community. With the permission of the Council she is doing 2 things:

1. **Working with Yolŋu to make computers more available in this community.**

   The computers can be used for:
   - learning
   - information
   - recording stories
   - recording languages
   - internet banking
   - shopping
   - music
   - games

2. **Writing the story of the computer in Ramingining.**

   This is the research part of her work and it will tell the story of what was easy and what was hard as we worked together to make computers more available in our Community. If you would like to:
   - use a computer
   - learn about computers
   - contribute to the story
   - find out more

Talk with Anthea or ask at the Council.

So my search for a place to live was always accompanied by the search for a place to work. There was on the other hand, no question about the work. The Council, Yolŋu elders, many individuals, as well as Balanda representatives in the various institutions were all adamant they wanted me to do what my project proposed. (See Figure 2.) But places to live and work remained elusive.

I had meanwhile been encouraged in this project by another institution. The Northern Territory Library and Information Services (NTLIS) was looking for a means to re-establish the library in the town, in the form in which it now did this work, that is, as a Knowledge Centre. As later stories will tell, this was proving difficult and not just because of the closed building. My search for a place in the town to create public access to computers was accompanied by my search for a place to re-establish a Knowledge Centre. The Council, in both its Yolŋu members and its Balanda managers was fully behind these aims and many discussions explored again and again the limited possibilities for a place for this

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8 See Nakata (2006), 'Evaluation of the NT Library's Library and Knowledge Centre Model'.
work, and for a place for me to live. The arrival of a new Council CEO in October
gave the search a new burst of energy. Together we even rode around the town on
our bikes, hunting physically for a site which might have eluded our imaginations.
An old derelict caravan behind the Resource Centre on the far edge of the town
was the best we could find and some time was spent seeking the advice of local
tradesmen as to the best way to move and renovate it. The fact that a very large
tree had grown up directly in its path, and that it no longer had wheels didn’t seem
to daunt their imaginations. But the plans finally dwindled to admissions of defeat.

Meanwhile I did volunteer work in the Women’s Centre, some paid work in the
Council office and some tutoring in computer use in the Resource Centre. By late
October my forced march between temporary homes became too strenuous and with
the Council’s encouragement I went back to Darwin for a month and advertised for a
caravan. We negotiated a contract which would mean that the Council and I would
share the costs and by early December a respectfully shabby 1970s caravan and a
new shower-toilet unit were on the barge. The Council CEO had arrived in Darwin
and she and I set out to drive the five hundred and sixty kilometres back to
Ramingining. Half way there we found an over-night flood had closed the road and
our journey, complete with one dog and six hens, turned into a thirteen hundred
kilometre odyssey. We arrived with one dog and four hens. It took two months
however before the elements necessary to assemble my caravan and wash-house on a
negotiated site in the town, had all come together: land use agreements, permission
from traditional owners, the Council, my prospective neighbours, the builder, the
plumber, the local Emergency Services Officer (and an eventual understanding
between them all as to whose respon-sibility was what), an electrician from
Milingimbi, the assorted ingredients for a power box, a load of gravel, a forklift, a
front-end loader, shovels, hours of back-breaking labor by a group of my former
pupils, shade-cloth, a tent, water containers and long hoses .. even Telstra, a satellite
dish and a technician who had to be flown in. These were just some of the *dramatis
personae* in a long act. In February when I was finally installed yet still without
running water - in a Northern Territory wet season - I occasionally lay on my bed in
the van and wept.
But there came a day in April when I stepped out of the van one morning into that clear air which heralds the dry season and noticed the way the morning light lay on the perfect arrangement I was now living in.. with its small but promising garden, its outdoor tables and chairs and an adjacent tent complete with a computer and a radio connection to the satellite dish on the roof of the shelter. I was overcome with joy and awareness of how much I loved this place; something I had almost lost sight of.

The caravan, and ‘the iNet café’ - which is how we referred to the tent, and the tables and chairs in the shelter of the large roof which covered it all - became a new semi-public space .. or rather, a shared space. There was nothing quite like it anywhere in the town, as it wasn’t quite Balanda and it wasn’t Yolngu. It was a space we never locked in the ten months I lived there. It had several gates, to contain my dog, but Yolngu came and went as they found themselves in relationship to me.

I said before that when I returned to the town I found myself in a new position, neither Yolngu nor public servant and that this had created a housing problem for me. I didn’t return however, as a stranger. I returned to a resounding welcome from my Yolngu friends and family. Such a welcome warrants an explanation.

Soon after my arrival in Ramingining, in 2001, I had been adopted as a sister by Rupu Gaykamangu; at the time my Teacher Assistant. In this relationship I had received the skin name Bulanydjan, and from there my relationship with everyone in the town spread out like a wave. This act is known as gurrpan, the calling of kinship. But just as a wave might need to negotiate objects in its path, the nature of kinship relationships sometimes needs to be negotiated. My mentor Yambal was married to one of Rupu’s sisters. By this pathway I too was a potential wife. However by skin name I was also potentially Yambal’s waku, his sister’s daughter. This relationship, known as napipi-waku, is one of the powerful yothu yindi relationships. It was an excellent way for Yambal and I to work together. We duly called each other napipi and waku.

There are many such reciprocal relationships in the complex, recursive system of Yolngu kinship, and the challenge to the Balanda adoptee, is to know how to reply to

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9 See Appendix 3 for a commentary on these terms.
the greetings which constantly tell of their place, of their relationships (their gifted
relationships), in the town. A student calls out, Mari! (Hi mother’s mother!) and one
needs to reply, Guthara! (Hi daughter’s child!).\textsuperscript{10} To momu (father’s mother) one
replies gaminyarr (son’s child); to mukul (father’s sister), gäthu (brother’s child) and
so on. It is an exercise in mental gymnastics for us adoptees. For Yolngu it is
negotiating what Inga Clendinnen called a ‘cathedral in the mind’.\textsuperscript{11}

\begin{center}
\textbf{Interlude 1 - A Tour of Ramingining, September 2006}
\end{center}

Ramingining is an Aboriginal town on the western boundary of northeast Arnhem Land, five
hundred and sixty kilometres east of Darwin and twenty-five kilometres inland from the Arafura
Sea. It has approximately seven hundred residents of whom most are indigenous Yolngu Matha
speakers and about fifty are non-indigenous employees of various government and non-government
institutions and projects. The latter are locally known as Balandas.

But an introduction like this lacks heart. And dust. There is another approach.

Whatever way you travel, by road, air or sea, unless you have a helicopter the last leg of the journey
will be by road: five kilometres from the airport south of the town or twenty-five from the coast to
the north. And if it is the wet season these unsealed roads will be muddy. If it is the dry they will
be dusty. If you are unlucky they will be heavily corrugated. Luck would mean Rumburumba, on
the grader from the Resource Centre, had recently worked on that section of road. If you pass him
he’ll raise his hand to acknowledge you.

You may meet others too, before you reach the town: Yolngu travelling to or from one of the four
main homeland outstations or the many smaller ones, in fast moving, well worn 4WDs, probably
overloaded, possibly with people on top. You may also pass a Balanda in a less well worn vehicle,
headed to the airstrip or the barge landing .. on business.

Both roads, when they reach the town, become boundaries. The road from the north becomes the
eastern boundary and from the south, the western boundary. They meet very quickly of course; it is
only four kilometres to do a full circuit of the town and that includes several large tracts of
bushland. If you choose to get your bearings by driving around it you may well meet some more
people: Yolngu carrying wood or pandanas into the town or heading for an outstation on foot, arms
full of the ubiquitous brown paper bags of food from the ALPA store. Kids playing imaginative
games with some old sheets of iron, a fallen tree and some empty flour drums. A couple of
Balandas striding out with well fed dogs in tow.

Let’s say you start at the school and cross the road to enter Milbirim Street. It is typical. Broken
asphalt. Potholed. Houses on the left for a while, then on both sides. The houses are not all alike,
but they are all low bungalow buildings, either of painted cement brick or coloured iron. They are
in various stages of weathering. Some houses have fences. Some are well hidden behind dense
gardens most characterised by the broad fronds of banana plants. It isn’t at first obvious whether
the fences and gardens represent distinct groups of residents, like Yolngu and Balanda. That comes
later. At first there are no houses on the right, just a scatter of public buildings in a lot of space.

\textsuperscript{10} Note however that this is a simplification, since my märi may be my mother’s mother and her
brothers and sisters, but may also be my mother’s mother’s brother’s son’s children. And more.
\textsuperscript{11} The Boyer Lectures, Clendinnen (1999), ‘Inside the contact zone’. Note that the term ‘cathedral in
the mind’ is not used in the preserved version of the lectures. There the term is ‘steepling thought-
structures -- intellectual edifices’. However, after listening to Clendinnen on the radio I was always
left with the former expression in my mind and so thank her for it.
Figure 3  Map of public buildings in Ramingining, 2006-2007, Source: Anthea Nicholls

1. Olc Council Buildings - including Knowledge Centre from May 2007
2. Olc Library Building - became new Council Building in March 2007
3. Bula'bula Arts Aboriginal Corp
4. ALPA Store
5. Visiting Officers Quarters
6. Clinic
7. Women's Centre
8. Community Education Centre
9. Homelands Resource Centre
10. Visitors Centre
11. Basketball Court
12. Caravan and iNet Café
Let’s say it’s the dry season and there is a lot of dry grass, some of it burnt away, but patchy. There is a large sandy area with the remnants of a stage and a large cross leaning onto it. There are five main buildings and an enclosure with communication towers and a hut. Very Telstra.

Building 1: The Ramingining Community Council. A sign indicates that Ramingining won a tidy town award in 1997. Since then something has happened. The council building is rotting into the red soil. Rubbish is washed against it like flotsam. A pipe is leaking into a puddle. Graffiti varies from the gentle to the angry. One wall screams out from behind a barrier boarding off a stretch of rotting floor boards on the front veranda. On the other side a bench seat and a public phone. The hand set is held together with sticky tape. There are doors on all four walls. To the left a cluttered bookkeepers office. Just now it has one Balanda looking harried, one Yolngu sitting at a table in conversation with another Balanda, and one more Yolngu sending a fax.

He walks out and over to the door on the right where there is a small glass window. Inside you can see a bevy of people sitting around in a loose sort of queue. A Yolngu woman sits behind a desk in conversation with a client over a piece of paper. This is the Centrelink office. Another door has no window and is locked. We can only see into it if we join the queue outside the building and bend to peer through a small window. Two young Yolngu women are inside. This is TCU, the local branch of the Traditional Credit Union; the only banking facility in the town.

Out the back of this building there’s a more cheerful relocatable, a duplex building with two doors. Both are open. We are lucky. In one sits the CEO at a computer. The main feature of the rest of the room is filing cabinets. Next door, a desk, a chair, a filing cabinet, no computer. It is the Yolngu Chairman’s office. He is out just now. He has family business to attend to and his vehicle won’t start.

Building 2: The old community library and TAFE training centre. It lies just north of the council, past a roofed open space with another neglected stage at one end, flanked by two iron-clad rooms. One is the office for the Missionary Aviation Fellowship (MAF), the local airline. The other is for the housing and building management work of the Council.

The old TAFE building is closed and brooding. It is long with a central caged breezeway separating its two former functions. If you peer through the dusty windows you can see that the library end has more recently been used as a second hand clothes market .. but not that recently. You can’t see it but a computer has been placed on an upturned table so that it sits askew. It is very dusty. It all got closed over a year ago to allow the Council to move in while new building took place. But it remains largely unused.

Building 3: Bula’bula Arts Aboriginal Corporation, next door. It is a gabled two-storied building with its external angles and spaces emphasized with textures .. the criss cross of timber lattice, the horizontals of corrugated iron and louvers, and a striking mural. The atmosphere changes suddenly. Downstairs there is activity. Builders are working in an open space cluttered with tools and timber. Upstairs a cool open gallery hung with stunning works in fibre, bark, canvas and paper. Behind glass windows you get a glimpse of two more Balandas. They look busy too. While we are there two Yolngu women arrive with several baskets and a spectacular woven mat. One of the Balandas and the women are soon deep in a conversation which involves some writing in an open book. From outside but still upstairs on the Bula’bula veranda we can see a lot.

Building 4: The ALPA store. To the north east. Very long, low, red iron, with an open sliding door midway in its side and perhaps twenty people scattered around a fenced yard. There are several concrete tables. One is laden with brown paper bags. Three Troupies loiter nearby in the semi-shade of an informal parking area. Five dogs loiter around the people. Three look well fed. One has only a little hair and prominent ribs. It moves quickly and warily amongst the other dogs. One is obviously a nursing bitch; it has low slung dugs and looks exhausted. Someone throws it a
piece of chicken. If you look closely at the open door-way in the building you can see the left side is a counter, for take-away, and the right side leads into the store.

Building 5: The VOQ. The Visiting Officers Quarters. A throw back. A small iron building in its own fenced yard just to the left and north of the ALPA yard. The building is locked. Usually only the regular stream of ‘visiting officers’ (the dentists, nutritionists, consultants, etc) get to see inside. It’s nothing special but most basic amenities are supplied. Next door, the Single Mens’ Donga. Don’t even ask. As one Council CEO commented, ‘Even the kids don’t break into it now’. It’s an old white portable with a sad expression.

Building 6: The Clinic. You can only just see it from the Bula’bula veranda. It is north, over a road and an open grassy space. It’s a small building; light-green cement brick with a worn but businesslike air. When we head that way we see that the people waiting on benches outside look tired but patient.

Building 7: The Women’s Centre. It’s behind the clinic. Another cement brick building with a fenced yard and covered play area. It doesn’t look very cared for or even very used from outside, but inside there’s a bevy of activity. We are lucky; yesterday the women were all involved with a funeral and no-one was here.

Someone is in the kitchen on one side of the building, contemplating a large array of equipment newly unpacked. Someone is mopping the floor. The water looks a bit muddy. A few large boxes of second-hand clothes clutter the space, spilling onto the floor. Another woman is playing cards at a computer and a fourth is sitting at a computer inside what looks like an office at the end of the room. She is helping someone with a banking enquiry. Out in the paved play area several women and children are sitting together. The children play with toys. A large plastic dinosaur and a mammoth lie nearby.

Building 8. Ramingining Community Education Centre. To reach the school you walk back to Milbirim Street and back to where we entered it. The school lies in front of us, across the western boundary road of the town, clunging to its side and hemmed in by bush. It is a cluster of buildings in a green space of watered lawns and trees. There is a mixture of new and old buildings with protective caged breezeways. An impressive mural blends the central building into the surroundings. If it is morning tea or lunch time there is plenty of activity, but otherwise it looks deserted with only a ‘sound-less-hum’ of activity in the air and bodies which occasionally scurry between buildings to suggest otherwise. If there is a small knot of kids, loose on a task, they’ll be moving more leisurely, finding fun on the way.

Building Cluster 9. The Ramingining Homeland Resource Centre and Council Workshop. These buildings lie on the southern boundary road of the town and this road is bisected by another which runs straight out of the heart of the town, past Bula’bula on the right and the VOQ and ALPA on the left, then the town oval .. knee deep in dry grass at this time of year. When you get to the T-intersection, straight ahead is an impressive, long low building with few windows; little by which to guage its soul. It is softened by green lawns and flowering bougainvillea. There is a fuel pump with a sign: 24 hour Fuel Card service - Business Mon-Fri 9.00-4.00. This is the RHRC, the ‘Resource Centre’. While Council has responsibility for the town, Resource looks after the outstations.

Beyond the Resource building are workshops, and high cyclone fences. Directly behind the main building are some impressive looking workshops and a fleet of Troupies. To the right, stretching away, a group of iron sheds belonging to the Council, which diminish in size from huge to medium and deteriorate from shabby to downright lost. Just beyond the lost shed with a carpet of junk on its floor and smashed windows for eyes is yet another iron building. Green, tidy, secret looking. If you have a key you can walk through the sad abandoned shed and open it.

Building 10. The Visitor’s Centre. It is a surprise. It has a central shared area, clean and cheery, and eight small cabin-like rooms which can be rented for fifty dollars a night. The toilets and showers are just outside. It all looks very Balanda.
Then, over the fence, it’s bush again. It goes on from there, depending on which way you head, even for five hundred kilometres. If you aren’t local you stick to the roads. And even if you are local, you don’t leave the roads and tracks without a purpose.

Purpose. It’s a central theme in Ramingining. Why are people there? Where did they come from? Ramingining as a town has only grown up in this spot since the 1970s. The people who live in the town as opposed to the outstations have come from many directions but mostly from the north and east: Milingimbi, Howard Island, Galiwin’ku, Gapuwiyak. The traditional land owners for the area live mainly in the outstations to the south and west of the town. But we are still in the town. We have only been in three streets and there are about a dozen. They all look more or less like Milbirim Street but without the public buildings.

There are one hundred houses in the town. Thirty seven are for the fifty Balandas. The rest are for six hundred Yolngu. Maybe that accounts for some of the general air of dereliction about the town .. although that varies enormously from house to house. You can spot the Balanda houses. The fences give them away. Not the fences per se, but the type of fencing. Balanda fences were built with the houses, by contractors. Yolngu fences are collected, and hard won. They grow up from iron and stakes and wire salvaged from the local tip. The state of the houses also varies. Most of the Balanda houses are new though there are a few shabbier ones dating back to the seventies and some very new Yolngu houses .. tropical designs in bright coloured iron and lots of veranda space. There is a cluster of four brand new teacher houses with a hint of ghetto, but otherwise the houses tend to be mixed, at least street-wise.

Streets now. They are all alike: sealed but potholed and rough at the edges. In the wet they can become vast archipelagos of puddles, treacherous to bike riders but fabulous for kids with a flat surface: a board, a scrap of metal. Things like that are easy to find. In fact if you want something flat, or round, or long, sharp, heavy, or whatever, chances are you can find it if you look around. Rubbish is good that way.

But this has all been about buildings and roads and things. Things because there are people here. And depending on the time of day we may see people too, especially the groups sitting by the houses, some with fires despite the heat. There is a sense of general contentment and companionableness about it all. And about what they call out as we pass ..

*Gaminyyarr! Yow’ waku. Momu.* And that quiet one, Galay.


In this atmosphere of belonging (through adoption) and not belonging (not having a house or work place) I lived in this town until the assembling of the caravan and the iNet café in February 2007. From then on I at least had a physical base to live and work from. But despite several experiments with long leads and corners of rooms it wasn’t until May 2007 that we found a home for the Knowledge Centre. It was the small duplex - the CEO and Chairman’s offices - behind the old Council building which had finally been evacuated when the ants did what nobody else had managed, not even a succession of four CEO’s and several expensive architectural consultants. The ants short circuited the power supply and moved everybody in a day. But reflecting on the agency of ants is a perfect place to give way to another story.
Chapter 1 - Following actors

Theories are always metaphoric and therefore precarious. From my perspective, the only effective antidote for the airsickness caused by theoretical flights is periodic returns to the field. As a theoretician I never get sucked in by informants, over involved in their worlds, misclassify my data, screw up an interview, piss off a gatekeeper, misread meanings members put on events, or become bored, lost, or underfed or overfed with information. As a fieldworker I am never free of these problems. It is humbling but it is the closest thing to church a theoretical atheist is likely to find.

van Maanen 1988, p124

If I didn’t return to Ramingining as a stranger, nor did I arrive alone. In Yolŋu Matha there is a concept known as the bāmara. A bāmara is a companion, but it carries the connotations of someone who accompanies you when you would not go alone. When I returned to Ramingining I was accompanied by a veritable mob of bāmara mala,¹ and this chapter is their story.

Part I: Actor-Network Theory

Back at the university I had been reading, and I had begun with a reading list handed to me by my supervisor. It wasn’t a random list of course. He was introducing me to a group of writers who would soon become very familiar to me as names, but also as a group, with a name. And the name had become a problem. As one of them, John Law, expressed it, the problem was ‘how to talk about something, how to name it, without reducing it to the fixity of a singularity?’ ²

This was 1999, and he and his colleagues were puzzling over a dilemma. As sociologists, historians and philosophers they had been working in parts of the academy which had been gathering sibilant names like SSTS, STS³ for several decades. They were all interested in what was happening as people and things, especially things like machines, become increasingly interwoven in the modern

¹ The word mala denotes the plural in Yolŋu Matha, but because it also conveys the idea of a group it suggests a particular kind of plural: here is a specific group, not just an indefinite plural as implied by the Germanic –s suffix used in English.
³ Where S always stood for social, society or science studies, and T stood for technology.
world. What was happening here? Who or what was driving this stuff? There had been classic moves to simplify these studies with theories of social or technical determinism, but this particular group of sociologists had resisted these moves and in the process of endeavouring to maintain a symmetrical attitude to all potential participants (whether human or not, whether material or not) in any sociotechnical situation (ie. any situation in the modern world) they developed an approach, a way of talking about these situations which uncannily ‘worked’; that is it worked in a different way. It enabled complexity to be encountered in a refreshing, exciting way, with the tantalising hope that on this path we might see things which would otherwise be missed, and so understand things we might otherwise have not. More importantly it even dared to suggest that it was saying things relevant to questions about ‘the kinds of people that we want to be, and about how we should live.’

But the dilemma expressed by Law in 1999 was about the name that this work had ‘gathered’ on its travels, a name which by then had become so well used it had collapsed into its acronym, ANT: Actor-Network Theory.5

Having set out concerned with ‘how to talk about complexity, to appreciate complexity, and to practice complexity?’ Law and his colleagues, particularly Bruno Latour and Michel Callon, were now asking, ‘How to resist the singularities that are usually performed in the act of naming. How to defy the overwhelming pressures on academic production to render knowing simple, transparent, singular, formulaic.’ 6

In 1999 they had some interesting answers to that, but curiously, in 2006, I was still interested in how they had gotten into this dilemma. About to face a complex sociotechnical world as a researcher I wanted a way to talk about complexity, to encounter complexity and even (shame) to find something simple, transparent and singular there! When someone wrote that ANT ‘made it possible to see connections and relations between fragments and pieces, the ones initially totally separated from each other’, that was what I wanted to hear. So I immersed myself in the story, or

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5 As a useful introduction see Law (1992), 'Notes on the theory of the actor-network'.
6 Law (1999a), 'After ANT', p10-11, emphasis in original.
rather, the stories. I soon found that ANT was fundamentally ethnography. It was grounded in the places it was talking about. It took me to those places and said, ‘Look! Watch what is happening.’ It called this ‘following the actors.’ Latour was preaching it in 1987\(^8\) and still advocating it in 2005:

Once again, even if it has become somewhat irritating, the only viable slogan is to ‘follow the actors themselves’; yes, one must follow them when they multiply entities and again when they rarely entities.\(^9\)

However there were also warnings. Here is Law, as early as 1991:

In many ways the method is a good one. It is a way of generating surprises .. But .. if we follow the actors we pay a price. This is because it becomes difficult to sustain any kind of critical distance from them. We take on their categories. We see the world through their eyes.\(^10\)

Not that I minded. I was fascinated by the early ANT stories, which were even being referred to as 'the sacred texts'.\(^11\) The ANT writers were all great story tellers and it was in salty air above the scallop beds of St Briuc Bay, the mud of French farms beset with anthrax, in Portuguese vessels on the high seas and in the shade of cathedral walls resounding to the sounds of the masons’ hammers that I learned this way of thinking about and talking about technology in society.\(^12\) It was very definitely a ‘way of talking’, with its own vocabulary and its own preoccupations. Some of these were easy to adopt while others were tantalisingly elusive.

The vocabulary of Actor-Network Theory

The ANT use of the term heterogeneity was easy, and given where I was heading, it was a welcome concept. I first came across it in Law’s account of Portuguese navigation where ships, sailors, navigators, kings, tides, stars and charts were all players, all actors in the story; all ‘able to make their presence individually felt’.\(^13\) I had lived in Ramingining for over four years at this stage and no memory of life there was exempt from this sort of heterogeneity.\(^14\) And I soon found that ANT was

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\(^8\) In *Science in Action* he doesn’t use the phrase itself but laboriously describes the process, as he follows scientists through their laboratories. Latour (1987).


\(^10\) Law (1991), 'Monsters, machines and sociotechnical relations', p11, emphasis in original.


\(^12\) See Callon (1986a), 'Some elements of a sociology of translation'; Latour (1983), 'Give me a laboratory and I will raise the world'; Law (1987), 'Technology and Heterogeneous Engineering'; Turnbull (2000), 'Talk, Templates and Tradition'.


\(^14\) See for example Glen and Daisy’s story in chapter 3.
obsessed with this concept and the related idea of the impossibility of extracting something ‘social’ out from the materiality of the sociotechnical worlds it was concerned with.\textsuperscript{15} It would admit of no fundamentally explanatory categories or dualisms. It had to do with all actors, whether human or non-human, material or non-material. If dualisms, divisions and unequal distributions appeared they did so because of the relations between the actors in this or that situation. As Law put it, ‘It is rather that such divisions or distinctions are understood as effects or outcomes. They are not given in the order of things.’\textsuperscript{16}

Importantly, ANT challenged the idea of a social world - with its own social forces at play.\textsuperscript{17} It upheld this stance under three banners: agnosticism, generalised symmetry and free association. Callon defines these terms:

- agnosticism: allowing for impartiality between actors engaged in a controversy,
- generalised symmetry: a commitment to explaining conflicting viewpoints in the same terms; that is, to not changing registers when moving from the technical to the social. And
- free association: the abandonment of all a priori distinctions between the natural and the social. It means rejecting the idea of a definite boundary which separates the natural from the social. Such divisions are considered to be found in the course of an analysis, not its point of departure.\textsuperscript{18}

Law elaborates on this, extending the terms ‘social and natural’ to encompass all of ‘the elements that go to make up a heterogeneous network, whether these elements are devices, natural forces, or social groups.’\textsuperscript{19} He emphasizes that in taking this symmetrical approach, social elements should not be allowed to presume an explanatory status, implying that this is often the case.

\textsuperscript{17} See for example Latour (1987), and Latour (2005). In reviewing this work by Latour, Oppenheim says, ‘The ANT presented … [is] in open revolt against ‘the social’ as a sui generis kind and as a prior explanatory resource rather than an achievement to be explained …’ Oppenheim (2007), ‘ANT and anthropology after science, technology, and society’, p474.
\textsuperscript{18} Callon (1986a), ‘Some elements of a sociology of translation’, p3-4.
The form that these elements [of a heterogeneous network] take may be, and often is, a function of the technological or natural features of the system. This is a contingent matter, a function of which components of the system are associated most durably and are hence least susceptible to dissociation.\textsuperscript{20}

To say this is not, of course, to suggest that it is always the social that is malleable and the technological or the natural that is durable. It is rather to stress that the relationship between them is one of contingency and that it is \textit{important to find a way of treating all components in a system on equal terms.}\textsuperscript{21}

Note my emphasis. Law doesn’t assume that treating all elements in a story on equal terms will happen readily. We will have to find a way to do it. It became ANT’s mission and the work of its carefully chosen vocabulary.\textsuperscript{22} It became my constant challenge in Ramingining.

Very soon ANT had its own well known ‘signifiers’ for this important stance. The lists of \textit{dramatis personae} were potentially endless but certain actors became notorious and any one of them could conjure up the rest of the list: scallops, tides, scientists, fishermen, electric vehicles, aircraft engineer board rooms, anthrax bacilli, mud, cattle, vaccine laboratories.\textsuperscript{23} They all participated in telling - in spelling out - the ANT story.\textsuperscript{24} And these early actors were gradually joined by others, equally vocal: the Zimbabwe bush pump, atherosclerosis, anaemia, fertility clinics, and even ‘Andrew’, the manager of a busy laboratory. All these actors said it over and over again, ‘the social is not purely social at all.’\textsuperscript{25} Latour said it laboriously in a virtual trip around Paris and suggested that,

When there’s a lack of techniques, when by chance a strike or breakdown deprives us of a means of communication or transport, everyone learns, walking and talking, that the social world is indeed flat, that it has to be composed piece by piece, staircase by staircase,
But this quote illustrates a challenge for anyone endeavouring to make an account of ANT, even a very personal one, as I am making here; the story of how I encountered ANT and how it became, in the presence of many of its actors, my bämara mob in Ramingining. It is the challenge of trying to introduce its parts sequentially. It is difficult because it tends to use its own vocabulary in order to speak. Already in these few introductions I have allowed many actors to enter the story unintroduced, the term ‘actor’ and ‘network’ for instance and, in Latour’s words here, the fact that heterogeneity and the work that holds anything together is often hidden in practice; that it is at times of conflict, at the times things fail, that we see it. Latour develops this idea of invisible work with a pedant’s devotion in his trip around Paris and also in Science in Action, relying on an equally faithful reader to follow him as he follows actors through countless sites, creating in the process a somatic memory of the enormity of the work, the invisible work, which holds things in place, in cities, in institutions, in schools .. in homes and in streets. 

But another idea has also established itself here, without introduction. It is the idea of relationality, that ‘everything in the social and natural worlds (is) a continuously generated effect of the webs of relations within which they are located.’

Like other material-semiotic approaches, the actor-network approach thus describes the enactment of materially and discursively heterogeneous relations that produce and reshuffle all kinds of actors including objects, subjects, human beings, machines, animals, ‘nature’, ideas, organizations, inequalities, scale and sizes, and geographical arrangements.

Law uses the term enactment here, but elsewhere in ANT discourse there is a lot of talk about performance - the performance inherent in all sociotechnical phenomena - and this was another idea which felt ‘right’ as I prepared to return to Ramingining and listened to my mentors within the academy.

Aboriginal knowledge everywhere comes out of the routine practices of life and makes those practices possible. It is not naturally commodified like laboratory knowledge. Aboriginal knowledge is responsive, active, and constantly renewed and reconfigured. It is eco-logical. … It should be understood more as something that you do than as something that you have, knowing how rather than knowing that. Ensuring the successful transmission of knowledge traditions into the future generations has more to do with young people learning how to

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28 Law (2008a), 'ANT and Material Semiotics', p141.
29 ibid.
construct, rehearse, perform, and celebrate their shared knowledge collectively and respectfully, than it has to do with specific content, such as place names and species names and facts about their usefulness. This is not to deny the significance of what Aboriginal people know, it is just to emphasise its performativity.  

Mol uses the word perform too, in her introduction to her study of atherosclerosis in a Dutch hospital, but then deliberately exchanges it for the word enact. She worries about the implications of the stage metaphor which is conjured by the idea of performance; of the idea of ‘on stage’ and ‘backstage’ where something else (the real reality) is hiding. But I puzzled over this worry. As I contemplated another challenge associated with my work in Ramingining, of working in a way which I could talk about with articulate Yolngu friends, and of finding a metaphor which would allow the necessary translation between the discourse in the academy and the discourse (about my work) in Ramingining to feel ‘faithful’ - more traduction than trahision - I gravitated towards the metaphor of the ‘play’. After all, Ramingining is the home of David Gulpilil, of Ten Canoes, of an ancestral familiarity with performance. What is off stage in a particular story doesn’t have to represent a lurking ‘real reality’. It is another part of the story; the part we can’t attend to just now. It may well represent a silenced other - there has been plenty said about that and I will come back to it in chapter four - but I took the early lessons of ANT seriously. There are no frames, no edges to the networks; there are just limits to our ability to focus on and talk about (or even know about) everything at once. So I kept both words, performance and enactment, in my vocabulary.

The idea is central to material semiotics and as Akrich shows, performance is actually co-constitution. When actors encounter each other in networks they engage in a negotiation. We can watch the way humans and objects, for instance,

31 Mol (2002), The Body Multiple, p32.
32 The distinction comes from Law (1999b), 'Traduction/Trahison: Notes on ANT', where he discusses the tension in the idea of translation: between the sense of movement or faithful representation (traduction) and the sense of betrayal (trahison).
33 David Gulpilil is a well known Australian actor; Ten Canoes, directed by Rolf de Heer is an award winning movie recently filmed at Murwangi, featuring local actors from Ramingining.
34 See for example Latour’s hypothetical conversation with a student in Latour (2005), Reassembling the Social, p143-144. But note that Latour does acknowledge that, ‘The frame, or the context, is precisely the sum of factors that make no difference to the data, what is common knowledge about it.’ p144.
35 Akrich (1992), 'The De-Scription of Technical Objects'.
define each other, and indeed make each other. But if we want to actually see this adjustment taking place, to describe it, she says,

... we have to find circumstances in which the inside and the outside of objects are not well matched. We need to find disagreement, negotiation, and the potential for breakdown.\(^{36}\)

At times like this, Akrich says, we may see various outcomes. We may see objects being changed or even dismantled (not-used, as she observed in the case of photoelectric light kits in Senegal) or we may see them at work changing their users (as in the case of a new electricity network in the Ivory Coast):

... new technologies may not only lead to new arrangements of people and things. They may, in addition, generate and "naturalize" new forms and orders of causality and indeed new forms of knowledge about the world.\(^{37}\)

... if we are interested in technical objects ... we cannot be satisfied methodologically with the designer's or user's point of view alone. Instead we have to go back and forth continually between the designer and the user, between the designer's projected user and the real user ... \(^{38}\)

I was indeed interested in technical objects. And I was about to watch them in situations where, as Akrich puts it, ‘their insides and outsides were [probably] not well matched.’ Would I get to watch computers and Yolngu changing each other?

I have quoted Law, above, using the term ‘webs of relations’.\(^{39}\) He could well have used the term \textit{networks} and probably avoided it deliberately. By 1999 it had become somewhat contentious.\(^{40}\) Here is Verran (much later) working up to the idea:

Entities - both objects and subjects, materialize or ‘clot’ as configured in particular ways in the here-and-now. This can be understood as a partial account of the ontic commitments of those working in an arena that is often vaguely standardized (in the sense of gathering behind a standard bearer) as actor-network theory.\(^{41}\)

Here ANT is making an ontic commitment to entities which function like actor-networks, that are performed within the relationships being enacted in the network-like semi-stable, semi-coherent structures which are emergent in the here and now. But earlier in the ANT story the talk was much less tentative. Callon developed the

\(^{36}\) ibid., p207.

\(^{37}\) ibid.

\(^{38}\) ibid., p209.

\(^{39}\) Law (2008a), 'ANT and Material Semiotics', p141.


\(^{41}\) Verran (2007a), 'Metaphysics and Learning', p37-38.
network metaphor in his classic story of the electric vehicle in Paris 42 where he proposed that objects are the products of actor-worlds, wherein all of the verbs are a kind of translation, and where successful translations result in simplifications: actor-networks which hang together, and may for a time become single entities. In the early stories these entities were often called black boxes. Here is Callon:

An actor-network is a network of simplified entities which in turn are other networks. ... The solidity of the whole results from an architecture in which every point is at the intersection of two networks: one that it simplifies and another which simplifies it. It can be translated into other actor-worlds. ... Although simplified into a point and displaced ... it is still composed of associated entities. While these entities are susceptible to being moulded or shaped, they in turn may transform the actor-world of which they form a part. It thus deserves to be called an actor-network. However it is distinguished from a simple network because its elements are both heterogeneous and mutually defined in the course of their association.43

This much quoted leit motif of ANT later became central to a discontent, which however, proved to be fruitful, spawning a whole diaspora of studies which came to be known as ‘After ANT’, or self-consciously ANTa. But lagging behind, in early 2006, it was this sort of clarity which attracted me. It seemed so obvious, having been so carefully crafted in well chosen stories, and well before I met Latour’s distinctions between intermediaries and mediators.44 And the curious fact that it was being said by people who were also making ‘ontic commitments’ to complexity and mess made it doubly seductive. Here were people I wanted to stay close to. They knew about mess. They were aware that attempts to tidy it up were subject to all sorts of suspicions, and yet, surprisingly, they had found a way into mess; a way to ‘show’ complexity. The rush to use the method (that is what it was, a method, not a theory purporting to explain things45) soon proved its seductiveness and by 1999 Law, Callon and Latour were all self conscious about its ‘success’.46 Fortunately for ANT they dealt with it by embracing the discontent.

Accused of being too concerned with studies that were ‘centred, managerialist and even military in character’, of ‘othering’ what didn’t fit nicely into network stories

42 Callon (1986b), 'The Sociology of an Actor-Network'.
43 ibid., p32.
44 Latour (2005), Reassembling the Social, p37. See also chapter 3.
46 Law and Hassard (1999), 'Actor Network Theory and After'.

and of being insensitive to the political agendas of its own stories, the response was only in passing to defend the early ANT work. (But didn’t you take so and so seriously when he said such and such?) The louder response was to embrace the plethora of studies which understood the underlying material-semiotics of ANT and pushed it further, giving voices to less managerialist actors and exploring spaces that didn’t fit easily into (classic) network metaphors: here the narrative prowess of the ANT writers blossomed and such unlikely bedfellows as the Zimbabwe bush pump, anaemias, liver disease, atherosclerosis and fertility clinics were assembled to tell that not only are the actors around us heterogeneous, not only are their relations heterogeneous, but the ontologies in which any of them are enacted are also multiple. Cussins calls the necessary awareness ‘ontological choreography’. Mol says she is making objects dance.

Mol and de Laet allowed the Zimbabwe bush pump to do this, proposing that rather than being network-like it is actually a fluid object. Like these authors I came to love this object. It is true that at times I wanted to ask, Why is this ontology? Why do we need to propose new kinds of objects? Aren’t we just talking about flexibility here? But I could feel a new way of thinking and seeing assembling itself. Law and Singleton undertook a study of alcoholic liver disease as they found it in a UK hospital, and they took the talk further. They suggested that some objects are not only not network-like (even if we aren’t just talking about networks with Euclidean spatial relationships). They are not even fluid-like, but rather fire-like; objects which exist as patterns of discontinuity between absence and presence. This talk was teaching ontological choreography. It went like this:

We need new methods for encountering objects, ie. new ideas about what counts as an object.

... although alcoholic liver disease is indeed an object, it is an object that does not look like an object because our methods are not geared up to detect or know it. Instead they lazily make it look like a more or less unknowable mess.

48 To the stories in note 25 is added Law and Singleton (2005), ‘Object Lessons’.
51 Law and Singleton (2005), ‘Object Lessons’.
It is possible to know complex objects by adopting an epistemological approach - by looking, for instance, for boundary objects. But we are proposing an alternative, and suggesting that, if we want to know certain kinds of (supposedly 'messy') realities well, then it is useful to rethink method in quite radical ways. (That is) ... we need to think more carefully ... about what counts as an object.\footnote{ibid., p334, emphasis in original.}

In pursuing this question, What counts as ab object? Law and Singleton have used Star and Griesemer’s term \textit{boundary object}.\footnote{ibid.} Here was an idea I thought I understood, of objects which are ‘both adaptable to different viewpoints and robust enough to maintain identity across them.’\footnote{Star and Griesemer (1989), ‘Institutional Ecology, ‘Translations’ and Boundary Objects’, p387} Star and Griesemer’s research on a Museum of Vertebrate Zoology, where they showed such objects at work, resonated so much it was soon at work in multiple sites. Somehow I knew it was going to be important in Ramingining (and was later not surprised to find it at work in Nhulunbuy, another Arnhem Land site\footnote{Ayre (2002), ‘Yolngu Places and People’, p95.}). But \textit{fluid and fire objects}? It was such a relief to be reminded that there are new ways to look. I had lived in Ramingining for over four years, I had listened to people who had worked there for decades, or lived there all their lives .. and I knew there was sadness and frustration and blaming all over the place. I so wanted to go back armed with the possibility of new ways to look and speak.

Already I had a growing lexicon. I have been highlighting it: heterogeneity, relationality, enactment, performance, network, boundary objects. I could add obligatory passage points and immutable mobiles, and will come back to them.\footnote{For a discussion of obligatory passage points see chapter 6. For discussion of immutable mobiles see chapters 3 and 4.} Other important words have already been enrolled here without comment: words like \textit{translation} (what all the actors are doing, one way or another), and the word \textit{actor} itself, for the elements that can make their presence felt in a network,\footnote{Law (1987), ‘Technology and Heterogeneous Engineering’, p131.} even though the use of this key word is disputed. Is it the most appropriate word? Does ‘actant’ better protect us from our tendencies to attribute agency to humans? Is it better just to say ‘entity’? I will use all of these terms. More-over, I haven’t taken on Mol’s reservation about the metaphor of staging, of ‘the play’, which is sometimes evoked...
by the word ‘actor’. It is very much the metaphor I took to Ramingining and it was crowded with actors. A big mob of them were backstage.

A big mob were also in the wings. At the university I couldn’t indulge my growing sense of some affinity with the ANT writers by excluding other voices. I was about to do an ethnographic study of an internet technology in a remote Aboriginal community. Type any one of the nouns or adjectives in this sentence into an academic search engine on the internet and it will come up with the traces of countless other networks.

Dissent in tales from the field

Having soaked myself in the ANT literature I became very sensitive to accounts which challenged (or would be challenged by) its commitment to material semiotics, its mantra to ‘follow the actors’, and its distaste for the art of ‘distorting into clarity’.58 I was nevertheless intrigued by the systematic method of collecting and sorting data promoted by Spradley in a primer on participant observation.59 His schemas for surveillance, suggesting even the domains into which one’s observations could be sorted (and for what one should keep one’s eyes open) might be an antidote to the ethnographic worry ‘what might I be missing?’, but it blatantly presupposed a world of people vs things and explanatory categories: reasons why people did things. I experimented with it early in my fieldwork (see chapter two), but with a growing sense of unease. I was grateful when I came across a remark by van Maanen, in his engaging Tales of the Field. He refers to Spradley’s models as ‘steel traps’ and the metaphor disengaged me immediately from my experiments.60 I saw how such comments became actors in their own right, able to make their presence felt in a network.61 Just as the tides in St Brieuc Bay had prevented the scallops from attaching to the scientists’ grids, so my strengthening ties to the concepts inherent in ANT prevented me from attaching myself to Spradley’s grids.

By contrast I felt at home in van Maanen’s reflections on the divergent manifestations ethnographic works take, in what he defined variously as realist,

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59 Spradley (1980), Participant Observation.
confessional and impressionist tales. I eagerly collected lessons from his writing and tried to take them to heart.

Accident and happenstance shape fieldworker's studies as much as planning or foresight; numbing routine as much as living theatre; impulse as much as rational choice; mistaken judgements as much as accurate ones. This may not be the way fieldwork is reported, but it is the way it is done.  

I thought I detected here something of the humility inherent in the ANT mantra, to 'follow the actors’. It is also a practical reminder of its commitment to agnosticism in the face of dichotomies we like to call true and false. So I am strengthening ties with my allies. It is an issue I will come back to in chapter six. But van Maanen also addresses the fact that while we might strive to treat false and true claims with the same semiotic tools, we are still in the business of striving to tell truth. He says,

.. the narrative tricks the ethnographer uses to claim truth are no less sophisticated than those used by the novelist to claim fiction.

I knew that chief amongst these narrative tricks was one’s choice of a vocabulary and I was busy assembling mine. I found an ally in Olivier de Sardan, whose concept of entangled social logic had overtones of another I found in Latour. Latour uses the concept of sociologics to distinguish it from the term logic. Logic, he says, asks, Does it go from one point to another in a straight line? Sociologics, on another hand, asks, Is it a weaker or stronger association? Sardan’s approach enabled him to discuss the phenomenon of uneven distribution of resources amongst families in development settings without dismay. Latour’s approach too promised insight into situations I was familiar with in Ramingining, where ‘logic’ was a disputed concept. In due course I would need such perspectives and report on them in chapter six.

But if I had found a small detour in Spradley’s methods, I found a veritable road block when I ventured into Rogers and diffusion theory, seemingly so pertinent to a study of computers as they emerged in a new context. This road block had been erected by ANT itself, or rather by Latour. For him the ideas inherent in diffusion

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63 ibid., p25.
67 Rogers (2003), *Diffusion of Innovations*. 

theory were the antithesis of the generalised symmetry of ANT. He sets out his argument in *Science in Action* in 1987.\(^{68}\) He saw diffusion theory (which endeavours to chart the progress of technology as it diffuses into society) as having logically (albeit ultimately illogically) to invent a ‘society’ as the substrate of explanations as to why technologies do not, in practice, diffuse evenly and automatically once they are introduced.

According to Latour, diffusion theory describes facts and machines as having their own inertia (that is, they are powerful and inevitable), and their emergence, maintenance and diffusion is explained by inventing the idea of a society; a society composed of groups of people who have interests. These groups accept, resist or ignore both facts and machines - just as people do in Latour’s stories too - but in diffusion theory they are reacting to facts and machines which have their own means of travelling. Not as in Latour’s account, where facts and machines are held in place by costly networks.\(^{69}\)

But rather than avoiding the word social, Latour multiplies its use and codes it. In *Reassembling the Social* he spells out the meaning he will give to the word social, as opposed to some homogeneous context of ‘sociology’, that is the ‘social’. He goes back to the origins of the word and claims a meaning for it ‘in a trail of *associations* between heterogeneous elements’.\(^{70}\) Rather than the substrate and source of explanations of ‘social phenomena’, society is the phenomenon itself. It is the association to be explained. Sociology becomes the *tracing of associations*, and social no longer designates ‘a thing among other things, like a black sheep among other white sheep, but a *type of connection* between things that are not themselves social.’\(^{71}\)

It is this notion of the social which has informed the title of this thesis. Although the idea of the social life of things comes directly from Appadurai and Kopytoff,\(^{72}\) and in their usage definitely did not embody Latour’s distinctions between the social and

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\(^{68}\) Latour (1987), *Science in Action*, pp 132-136, 141-142. Latour (2005), *Reassembling the Social* could also be said to be a polemic against diffusion theory, but in this work Latour doesn’t name it.


\(^{70}\) Latour (2005), *Reassembling the Social*, p5, emphasis in original.

\(^{71}\) ibid., emphasis in original.

the ‘social’,73 I have allowed their valuable phrase to be revived here, carrying with it the idea that the associations which are the preoccupation of ANT are lived; that it is in living that we intuitively understand the heterogeneity of the social.

Meanwhile, the road block which had prepared me to be wary of diffusion theory, didn’t stop me completely. The neatness of the diffusion studies is seductive. So why did I reject it as a way to design my research in Ramingining? Why did I gravitate towards the underlying lessons of ANT, of the emergent nature of phenomenon, rather than the dualisms and determinism of diffusion theory? I had already learned ways to describe this choice. I had learnt from Latour, the expression ‘what I am most dearly attached to’. When a controversy arises, he says, people

... look for stronger and more resistant allies, and in order to do so, they may end up mobilizing the most heterogeneous and distant elements, thus mapping for themselves, for their opponents, and for the observers, what they value most, what they are most dearly attached to.74

My strongest and most resistant allies, as I headed for Ramingining, were the metaphors, stories and authors I had encountered in my ANT reading. I had become embedded. It would have cost me dearly to disengage. I in no way felt compromised by this, however. The process by which networks disengage themselves from the conditions of their production, the process of accumulating positive and negative modalities,75 is the way complexity is encountered; the way science grows, the way research is justified, the way we stay not only sane, but believe we can proceed ethically. I trusted my allies.

Rogers too alludes to the agency of attachment in research. He refers to an invisible college of rural sociologist diffusion researchers, and admits that ‘another key factor in the growth of the rural sociology diffusion research tradition in the 1950s, in addition to the interconnectedness of the invisible college of scholars, was the availability of research funds.’76 I too was a funded researcher, on a scholarship. I was grateful this funding was not linked to a school of thought or policy; I recognised that the traces of my alliance with the ANT scholars lay elsewhere.

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74 Latour (1987), Science in Action, p205, emphasis mine.
75 ibid., p22-23
76 Rogers (2003), Diffusion of Innovations, p56-57.
Entering the discourse of ANT is like stepping into a hall of mirrors and prisms; it is fun, it is messy; at every point it reflects itself and finds itself diffracted. An account of Actor-Network Theory can both tell and illustrate its own methodology and at the same time begin a bigger story, as it does here, of a study which endeavours to use its insights and its methods; what Law has called

… a disparate family of material-semiotic tools, sensibilities and methods of analysis that treat everything in the social and natural worlds as a continuously generated effect of the webs of relations within which they are located.77

But significantly, there is also a warning: that if I take ANT seriously, then there is nowhere to hide beyond the performativity of the webs.78

… since our own stories weave further webs, it is never the case that they simply describe. They too enact realities and versions of the better and the worse, the right and the wrong, the appealing and the unappealing. There is no innocence. The good is being done as well as the epistemological and the ontological.79

I will come back to this challenge in chapter seven, but meanwhile there is another challenge to be met.

Part II: ICT and Indigenous Peoples

This thesis finds itself in the meeting place for studies to do with information technology and those engaged with Indigenous peoples. It is not surprising that, given the tsunami-like behaviour of information technology since its birth in the seventies and its unstoppable surge into all aspects of modern life, and the rich, deep, soul-searching, often troubling nature of Indigenous studies, that this field throws up a cornucopia of produce. But before wading into this choppy ground with all its promise and challenge, it may pay to recall the Yolngu metaphor of the ganma,80 the place where tropical fresh-water rivers meet the salt water, and so spawn the

77   Law (2008a), 'ANT and Material Semiotics', p141.
78   ibid., p154, emphasis mine.
79   ibid.
80   Verran and Chambers (1989), Singing the land, signing the land.
productive but often dangerous borderlands of the mangroves. For the Yolngu who are familiar with this terrain it is a rich inviting place, a metaphor for the coming together of very different worlds, and what can happen if they meet well. For the newcomer to such a place however, it is all too easy to become bewildered (in that old sense, of being left pathless) and to welcome distraction; to follow a fascination - perhaps the hunt for the huge mud crabs - and soon find oneself lost, a long way from solid ground, knee deep in mud, sun-burnt .. and thinking, Bloody hell! Now what!

In such territory it is always a relief to find a trail. I was relieved to find one in the plethora of studies under this rubric of ‘IT and Indigenous Peoples’, even if I soon came to be wary of it. Rather there are several trails, or story lines. One of them is well used and it goes like this.81

Information technology is good. It is good for good things, like

- helping to preserve Indigenous culture and languages, and language renewal;
- growing employment, through e-commerce and jobs in IT;
- enhancing services in education, health, justice, welfare and banking; and for
- enabling communication, whether indigenous, or mainstream.

But it is unequally distributed and unequally used.

It is unequally distributed due to ..

- Technology itself (ha! an internal flaw!) resulting in inequalities in affordability and availability;
- Geography and the Environment, which together are responsible for isolation, for heat, dust and other manifestations of ‘weather’ and ‘access’; and to
- Infrastructure: a hint of the vast networks by which power is delivered to users, and roads run past their doors.

81 For what follows, see for example Dyson (2006a), 'Remote Indigenous Australian Communities and ICT'; Dyson (2004), Cultural Issues in Adoption of ITCs by Indigenous Australians; DCITA (2002b), 'TAPRIC'.
And it is unequally used due to .. ● Social issues such as poverty, debt management, vandalism, or the small size of a population base;
● Educational issues such as low computer literacy, and a lack of Indigenous ICT professionals;
● Cultural issues, arising in non-English speaking, oral, communally based societies; and
● Business issues to do with understandings about business and high default rates.

But it is nevertheless an optimistic discourse. It is rich with stories, and despite a hint of reservation in my introduction, they are good stories. They are all about people working incredibly hard, under difficult circumstances, often in remote places, looking for creative solutions to these issues.

They are experimenting with innovative hardware and with software targeted at meeting specific needs. They are working in schools, in community online centres, through Councils and Indigenous Corporations, in Government funded initiatives or as researchers supported by universities. Or they are individual people, plotting their own course around obstacles and through opportunities for experience and training.

They are optimistic stories but they also record something of their struggle, their failures, their recognition of the dangers to which the internet exposes a person or a community; or the perennial issue of funding. In short they paint a big, noisy canvas, a Bruegelsque-view of lots of people, doing lots of things in lots of places.

83 See for example Daly (2005), 'Bridging the digital divide'; Lloyd (2003), 'More Important than Education'; Dyson (2006b), 'Indigenous People on the Web'.
84 Gaidan (2007), 'My Life with Computers on a Remote Island'; Mau (2007), 'How Computers Came into My Life'.
85 See for example Dyson’s review of factors affecting Indigenous peoples use of/presence on the internet, including issues to do with access, cost, lack of business understanding, governance, intellectual property, misappropriation of knowledge, commoditisation of Indigenous culture, decontextualization, and a perceived, potentially inimical impact of western culture inherent in the web. Dyson (2006b), 'Indigenous People on the Web'.
And over it all a quiet confident voice (just a little too reminiscent of HAL 86) sums up its belief:

The Internet and networking technologies of all kinds will link communities and overcome the disadvantage of their geographical isolation. 87

Information technology will allow indigenous people to revitalize their cultures and redefine themselves in the 21st century. It will help them overcome the injustices of the past and serve indigenous goals for self-determination and a better standard of living. Residing in their communities but linked to the outside world, they will become a vital part of the world community, sharing their culture and contributing their ancient ways of knowing to help solve the world’s many problems. Information technology will help them to become once more nations of respect, knowledge and cultural vigour. 88

And all the while other voices intone that all this will come at a cost and only with effort - a cost that hasn’t yet been met and efforts (despite all these stories) we haven’t quite succeeded at: Projects must always have community support. Funding must be assured. More creative solutions to the issues of culture and language have to be found. Underlying issues have to be addressed: unemployment, poverty and education for starters. 89 Suddenly I am back in the mangroves. What now!

What is more, these conclusions sound like a recourse to the categories of the ‘social’ which ANT has identified as tautological; which are products of starting with artificial distinctions between the ‘social’ and the ‘technical’ in the first place. 90

The Digital Divide

A second discourse goes like this. The voices are David Shay and Mark Warshauer, and they are talking about the Digital Divide; the concept which has come to dominate any discussion of the inequality of access to digital resources around the world. 91 Both voices decry its historical and resilient connotations of ‘connectivity’
and like everyone who now dares to use the term, make a big effort to keep its locus wide.

Shay argues that connectivity has become a new ‘measure of man’, replacing machines; that the digitizing mission aimed at developing nations has taken over from the ‘civilizing mission’, and is equally suspect as a form of cultural imperialism.\textsuperscript{92} It reinforces relationships of dependency in ‘unwired’ countries: ‘they are not wired’, ‘they are not us’, ‘they are not developed’.\textsuperscript{93} He argues that digital connectivity is closely allied with western assumptions about time and space, particularly with domination over time-space relationships. Virtualization, disintermediation and immediacy, key features of the ‘new economy’, are all inherent in it. And that in the end the internet has to be recognized, not just as a technology but as the very tool and organizational form that generates knowledge and networking capacity, and distributes information power.\textsuperscript{94}

So I hear him saying that what we are dealing with is big. Yes, it’s about access but it’s bigger than that. It’s about the distribution of knowledge and its access to power.

Shay turns to projects which he believes are demonstrating approaches which are different; that are not approaching a digital divide with a digitizing mission to connect objects into their own power networks. They are about empowering people to invent their own solutions to this digital divide, of working for, not a world full of wire, but a world full of creative people. He is referring to the projects known as DigitalDivide.org, DigitalNations and UNESCO’s Women on the Net.\textsuperscript{95} Shay is optimistic.

Warshauer has a problem with the term itself. He says the concept assumes a bipolar division between ‘haves’ and ‘have nots’ which belies a gradation, and moreover, tends to ‘digital solutions’.\textsuperscript{96} Like Shay he strengthens his argument by enlisting three community technology projects, but this time they are projects which all in

\textsuperscript{92} Shay (2003a), ‘Connectivity as the Measure of Man’.
\textsuperscript{94} Shay, ibid., p9.
\textsuperscript{95} ibid., p13-15.
some way failed. They were all significant projects: a street internet cafe in New Delhi, an ‘Information Age Town’ as a lighthouse project in Ireland, and a high powered lab injected into an Egyptian University. They failed, he implies, because they represented what he calls, Device and Conduit models for access, where

- a Device model focuses on the ownership/availability of a device, and
- a Conduit model focuses on access to a supply line providing connection.

ICT does not exist as an external variable, he says, to be injected from the outside to bring about certain results. ‘Rather, it is woven in a complex manner in social systems and processes.’ Like Shay he is thorough and he carefully argues for what he calls a ‘technology for social inclusion’ with literacy at its heart. He concludes that such an approach:

… allows us to re-orient the focus from that of gaps to be overcome by provision of equipment to that of social development to be enhanced through the effective integration of ICT into communities and institutions. This kind of integration can only be achieved by attention to the wide range of physical, digital, human, and social resources that meaningful access to ICT entails.

Is this sort of thorough soul-searching and analysis so very different from the first discourse I presented above, hinting at its utopianism by calling it a holy grail while commending it for its hard work, its optimism and its passing honesty? They both end with outstretched arms, trying to draw in the complexity with words like physical, digital, human and social. They both strive against the clinical injection of computers and telephone lines into rich, messy, human worlds. But here is a third discourse which also exhibits this sort of striving and yet leaves more traces of the strife.

The Inter-Networking-Communities project (INC) is an initiative begun at Charles Darwin University in 2005 to bring together people with strong interests in information technologies and people whose expertise lies in capacity building in remote communities. It is the trail these people have since left which interests me.

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97 ibid., p11-12.
98 ibid., p13.
And like the two discourses above it includes collections of stories on the one hand and reflective analyses on the other. Its stories are about

- innovative software solutions to a growing demand for IT support in maintaining Aboriginal knowledge systems: for example TAMI (standing for text, audio, movie, image) - a data-base project which strives for an ontological flatness which in turn may create a performance site for storing and using knowledge in ways which more faithfully reflect the performatve nature of Indigenous knowledges.\(^\text{99}\)

- software addressing access to education which works towards greater autonomy, for example in literacy: Read English on the Web;\(^\text{100}\)

- small scale cultural tourism in Arnhem Land homelands - where people residing on their own country run their own tourism business with the support of a Balanda bämara who has worked with them for many years, and speaks their language fluently: Arnhem Weavers;\(^\text{101}\)

- workshops which foster lines of consultation and trust between people with IT expertise and experience of living on country, now based in universities, and people still living on country;\(^\text{102}\)

- an INC studio at CDU with intel iMac and dual screen set up for professional editing use by Yolngu when they are in town, and for communication between people working at the university and on country.\(^\text{103}\)

- And yes, this is my university so the story of this research is there too.\(^\text{104}\)

As in the discourses I have described above, the participants in the INC program have embraced dilemmas: in particular recognizing that the rich mud created in the ganma is also potentially treacherous; that indigenous knowledge systems and the

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\(^{100}\) http://www.cdu.edu.au/centres/inc/currentprojects.html

\(^{101}\) http://www.arnhemweavers.com.au

\(^{102}\) http://www.cdu.edu.au/centres/macp/

\(^{103}\) http://www.cdu.edu.au/centres/inc/projects/inc_studio.html

language of the new media, reverting as it so often does to the logic of databases, can act inimically towards each other.

.. databases are not innocent objects. They bear within them Western assumptions about the nature of knowledge, and how it is produced, which may inhibit or undermine the intergenerational transmission of Aboriginal knowledge traditions.

This is the dilemma addressed by Bowker, who argues that

.. as sets of heterogeneous databases are made to converge, there is a layering of values into the emergent infrastructure. It is argued that this layering process is relatively irreversible, and that it operates simultaneously at a very concrete level (fields in a database) and at a very abstract one (the coding of the relationship between the disciplines and the production of a general ontology).

The implications are not trivial:

The concern grows from worries about disenfranchising Aboriginal knowledge authorities, further marginalizing legitimate Aboriginal interests, diversion of energy and resources from Aboriginal priorities, backgrounding of Aboriginal sensibilities and sensitivities about valid knowledge practices, and misappropriation of intellectual property.

In other words, the stakes are very high. And rather than acknowledging and then ‘othering’ the powerful agencies at work here, the Inter-Networking-Communities forum engages them. ‘Our response is to problematise the process of knowledge making.’

Its value moreover, resides in the traces it leaves in this process and the meaning it gives to these traces. It resides too, in the richness and promise of its propositions, the thoroughness of its processes, and the evidence of the trust it is generating. On each of these points there is something to say.

There has been a conscious effort to lay a trail, that is to not cover up, to not ‘other’ the work, the detours, the ‘troubling’ that goes on when people engage with the dilemmas inherent in places where alternative knowledges meet. Websites were deliberately used to display the mess of 'doing research'. Elsewhere, in reporting on the development of the TAMI concept, Verran and Christie et al place side by side

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105 The term comes from Manovich (2001), *The Language of New Media*. Chapter 8 will return to it.
109 ibid.
side four texts in order to ‘show what is backgrounded, [and] also gesture towards the ‘out-of-frame’, the vague, indefinite “hinterland” of TAMI.’ This is Law’s term.\textsuperscript{111} Verran and Christie et al take seriously his call for methods which engage with the messiness of both life and research and eschew the processes which first tidy it up and then cover the act of tidying.

They are characterizing their work as ‘located accountability’ after Suchman. ‘Our exhibit is designed so as to reveal what located accountability might be in practice.’\textsuperscript{112}

..the only possibility for the creation of effective objects is through nurturing the emergence of collective knowledge in the particular and multiple locations of their production.\textsuperscript{113}

It is work ‘done somewhere’, with traces of the somewhere still visible, as opposed to work done ‘no-where’, its traces, its ties to its assumptions, all tidied away.\textsuperscript{114}

A validation for this approach to research can be found in turn, in the richness and promise of its propositions. For example Verran takes us to a classroom in Africa where she was surprised into the realization that some bilingual children were able, not only to work their mathematics across two different ontics, but were able to articulate what they were doing. Verran has brought this understanding to the dilemma of the ‘ontological divide’ represented by Indigenous knowledge systems and the internal digital logic of data-bases. She imbues hope that the advantage given by two vantage points to the bilingual Yoruba children is evidence that opposing ontologies are not necessarily inimical to each other. Like the richness produced when fresh and salt water meet, this messy area of experience and research that we currently find ourselves in can be a place of hope and creativity.\textsuperscript{115}

But I am also encouraged by the thoroughness of the processes in which the INC projects engage. Rather than evoking images of hard working Balandas striving to

\textsuperscript{111} Law (2004), \textit{After Method}, p42.
\textsuperscript{112} Verran, Christie, Anbins-King, van Weeren and Yunupingu (2007), 'Designing Digital Knowledge Management Tools with Aboriginal Australians', p139.
\textsuperscript{113} ibid., p139-140. They are referencing Suchman (2002), 'Located accountabilities in technology production', p96.
\textsuperscript{114} Haraway (1988), 'Situated Knowledges'; Suchman (2002), 'Located accountabilities in technology production'.
\textsuperscript{115} Verran (2007a), 'Metaphysics and Learning'; Verran (2007c), 'Software for Educating Aboriginal Children about Place'.
‘engage community support’, the stories and traces here are of Indigenous and Balanda people working together, sharing and exchanging the roles of leading, prompting, worrying and doing. I find the evidence in the trust it is generating.116 ‘Workshops carry the research forward’, says one INC text117 and it is in these workshops that a rare phenomenon can be witnessed. It is the discussion of work, research, knowledge systems and their dilemmas, carried out in Indigenous Australian languages. In these places (and all the prior places they evoke, where the relationships underlying these possibilities were built) there is no need for Indigenous people to only use English, however competent in it many of the multilingual voices may be. At one of these workshops a Yolngu participant described the way it had come together. Her English was better than my Yolngu Matha so she told me in English. I wrote the story down and checked it with her. She said I was to share it, but not to put her name on it.118

When you go fishing you need good bait, not the frozen, or foreign bait. Not if you want to catch Ḗkʉ (parrot fish). If you are happy to catch burrumitpa (rock cod), you can use anything, even squid or frozen bait. The Ḗkʉ will make a mistake the first time, but after that it won’t take it. So you have to choose which one you want to catch. Which people you want to teach and work with. If John wants to go fishing he knows he has to take blue crab. That’s what he does with Yolngu. Here, for this workshop, he’s using the right kind of bait and Michael and Bryce too. They are a good fisherman team. So we are here.

Team work: some carrying the gapu (water) some the guya (fish) or gunda (stone). One who paddles, one in the middle, one is the captain, one puts up the mast, one knows where to put the anchor. They know the season and the weather and where to throw the bait, their word. If they throw it everywhere, it’s like a net. They will get good fish and bad fish. Some of those may not want to learn. They may not have the motivation, the heart for it.

John, Michael and Bryce. Without them it wouldn’t be happening.

118 Computer Workshop, CDU, 22 November 2006. She is talking about Inter-Networking-Communities participants Michael Christie, John Greatorex and Bryce Anbins-King.
It was in this atmosphere that my own project was nurtured. While I read Latour, Law, and their colleagues and grappled with the challenge inherent in ANT, to wade into complexity without a toolkit of assumptions about technology and society, about people and things, I always had a bevy of colleagues who were demonstrating what my work might look like.
Chapter 2 - Following the researcher

When you wish to discover … new unexpected actors … which are not yet bona fide members of ‘society’, you have to travel somewhere else and with very different kinds of gear. … There is no question that ANT prefers to travel slowly, on small roads, on foot, and by paying the full cost of any displacement out of its own pocket.

Latour 2005, p22-23

Latour was speaking metaphorically here, but if he was describing my return to Ramingining he could hardly have chosen more apt words. Moreover, on the use of this travel metaphor he says,

… ‘where to travel’ and ‘what is worth seeing there’ is nothing but a way of saying in plain English what is usually said under the pompous Greek name of ‘method’ or, even worse, ‘methodology’.

Law too resorts to metaphor here. In After Method: Mess in Social Research he is adamant that he is not subverting conventional research methods but calling for more, for variety, and for the use of more metaphors: even concepts as unlikely to be found in the discourse of conventional research as elusive, emotional, painful, lost, redeemed and visionary. He calls for methods which are slow, quiet, vulnerable and modest. I can muse, with Gad and Jensen, ‘So what about quick methods? What about immodest methods?’ And I can recognise with them, that ‘a turn to poetry or other genres guarantees nothing’, but on returning to Ramingining I was upheld by these metaphors.

Nevertheless, again like Law, I didn’t turn my back on conventional methods. I went to Ramingining to engage in participatory observation for a period of eighteen months. And as I have said in chapter one, I didn’t return there either alone or a stranger. I was accompanied by a bämara mob of ANT actors: concepts, vocabulary, my sense of the writers themselves and the many material and non-material actors in

1 Latour (2005), Reassembling the Social, p17.
3 ibid., p11.
5 ibid., emphasis in original
their stories. But when I arrived in Ramingining these actors were relatively new to me. They are not quite the actors I have described here, because in the ensuing months a process of interrogation took place. The computers and life in Ramingining and the material semiotics of ANT engaged in an interrogation of each other. This mutually revealing process was self consistent with the ‘theory’ of ANT, which acknowledges the co-constitution of phenomena in their enactment. I will have more to say about this in this chapter. But first I want to follow, for a while, the researcher who arrived in Ramingining in June 2006, armed with her notebooks, her new vocabulary and her laptops.

In Ramingining I carried with me an A5 notebook, and it became my primary record of what I was seeing, hearing and doing. I filled sixteen of these notebooks and refer to them as A5-1 to A5-16. I kept several notebooks, A4-1 to A4-3, exclusively for interviews and notes on focused conversations and six out of thirteen informal interviews were also taped. I did not use interviews extensively however and reserved them for Balandas and those Yolngu who were more familiar with Western methods of communication. This decision was reaffirmed when, towards the end of the fieldwork, I did engage an articulate person in an informal interview, and he concluded it with the question, ‘Is that the answer you are looking for?’

Seven of the interviews with Yolngu were conducted at workshops held at Charles Darwin University. These workshop participants were all computer users. They were from Milingimbi, Yirrkala and Galiwin’ku.

I experimented with ways to keep a day by day summary - of my encounters with people, computers and ideas in Ramingining - which would later provide an ‘index’ to the notebooks. It evolved into a table which I carried with my notebook and filled in by hand. It recorded the place, date and time of my encounters with people and brief notes on the exchange or event. Figure 2.1 is a sample of these records in which personal names have been replaced with descriptions.
<table>
<thead>
<tr>
<th>Date</th>
<th>Times</th>
<th>Places</th>
<th>People</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>29/6</td>
<td>4.00</td>
<td>KC</td>
<td>Two adults with two kids</td>
<td>Went to watch DVDs for orWhilst...</td>
</tr>
<tr>
<td></td>
<td>4.40 -6.00</td>
<td>Vanv</td>
<td>Two Bandalas</td>
<td>call boy...int in KC camping @ Djembe tonite...</td>
</tr>
<tr>
<td>30/6</td>
<td>1.30</td>
<td>Vanv</td>
<td>Two young women (E and D)</td>
<td>it. No pubs e passworld tonite...</td>
</tr>
<tr>
<td></td>
<td>2.00</td>
<td></td>
<td>Mobile Next G</td>
<td>Bugging E calls me for help E speaking on the name of a messicen...but can't help...</td>
</tr>
<tr>
<td></td>
<td>4.40</td>
<td>Vanv</td>
<td>Husband and wife</td>
<td>need me to keep act another phone for E's mother...</td>
</tr>
<tr>
<td></td>
<td>5.00</td>
<td>To Town</td>
<td>Young man (E) with a mate</td>
<td>A: that person how to be here... or I will come to you... The T/C E brings the phone &amp; I read...the T/C &amp; C understand some &amp; try to explain comes to E, he listens &amp; a little smile. If I prompt...</td>
</tr>
</tbody>
</table>

I kept a parallel record of where I was, time-wise, and of major events and translations in a week-to-an-opening diary. But despite all of these organised forms...
of recording I still found my baseline was a stapled wad of scratch paper which always lay on my desk, collecting the thoughts and memories which came when computers weren’t turned on and books and survey sheets were not within reach .. or not set up to record quite what came. In the end it was the messy interactions of the actor worlds I was engaged in that filled my notes, not neat, classifiable statements about people and about things.

There always remained, of course, the things that weren’t recorded; the events and words I just missed or forgot and the words that weren’t even spoken. I acknowledge (as all ethnographers about to tell stories do nowadays) that this inevitable process of ‘sampling’ is not innocent. But nor is it necessarily inimical. I agree with Ellis and Bochner, who, having just restated the dilemma of ethnography (that the products of the process, of turning observations into fieldnotes and notes into stories, can never be an accurate map) go on to say, that while we ‘treat our ethnographies as partial, situated, and selective productions … this should not be seen as licence to exclude details that don’t fit the story we want to tell.’ They even dare to say the ‘L’ word; that there is ‘a distinction between saying our work is selective, partial, and contestable, and saying that the impossibility of telling the whole truth means you can lie.’

This is an issue in all ethnographies. It is an issue because the actors in the stories are real, potentially identifiable people, but it is especially so when the stories are about events that were or may be contested; when people may have been behaving badly. Since this is so important I will state my approach to it several times in this thesis. Here I will say it this way: although the people who inspired my accounts are real people, the people in the accounts are my creations. They are cut-outs, created to carry words and actions spoken and done in the stories; words and actions that were chosen to tell something of what it is like in Ramingining. As Bochner and Ellis have stated, this is not a license to lie. I have tried very hard to be accurate. But since these stories are partial they are like 2D shadows: if a person is holding a stick in a certain way the shadow may well give them a big nose, or horns. I have not stopped, in these accounts, to say things like, ‘Oh, but on another day this or this

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7 I have discussed it again in chapter six.
happened, which may explain why so and so behaved like that,’ or ‘I behaved badly that day too.’ These stories are not about who was good and who was bad; they are about what it is like to live in Ramingining, and in the end, what it is like to be a computer there .. or someone who might want to use one. Some of the stories are sad and even shocking. But as Brochner and Ellis also said, ‘Maybe there needs to be more screaming about the atrocities people experience.’

Data collection - Surveys

While my work was basically ethnographic, and my various fieldnotes collected observations, conversations and encounters, I also collected some statistics. I did this because my background had imbued numbers with all sorts of connections for me. I supposed that changes in numbers would reflect other interesting changes and I was aware of the sorts of work numbers get to do in the academy and in government documents. Latour had shown something of the processes by which numbers become influential as immutable mobiles in the western world and I was interested in their use here in a place where Yolngu and western actor-worlds were now interacting.

In July 2006 and October 2007 I conducted a survey of the total number of computers in the town and whether they were used by Balanda or Yolngu. I present it in chapter five.

For each computer I subsequently worked with (in the Knowledge Centre and iNet café) I kept a survey sheet. These sheets recorded dates, times, the name of the user, the number and gender of bämara mala accompanying the user, and the type of use.

For computers available for public use, but for which I could not maintain my own surveys, I tried several ways to collect data.

• For September 2006 I placed a wall chart in the Women’s Centre, with an attached pencil. I used it and encouraged the women in the Centre to use it when I wasn’t there. It appears to have been well used. (Figure 2.2)

A survey sheet was left several times beside the computer which was set up in early 2007 for public use in the Council. These sheets never ultimately reflected computer use but they did demonstrate a need for paper and pencils beside phones and computers. (Figure 2.3)

The ‘history’ facility on the internet browser was explored, and since it initially resisted my attempts to copy and save the data, I collected it by hand. However, given large usage by visiting Balandas in the early months of the NT Intervention (see page 61) it was difficult to interpret.

When I left the Knowledge Centre and iNet café in November 2007 I handed over to a Balanda, new in the community and with some impressive IT experience. I handed over the survey sheets but found that almost no data was collected.

In May 2008 surveillance software was introduced on all public access computers in response to the NT Intervention legislation. I have not had access to this data but see chapter six for my observations at the time.

**Alternative data collection - A Journal**

Whereas the logistics of my work and movements made it sensible to record my fieldnotes by hand, I did resort to the affordances of a personal laptop in order to keep a journal. In this personal document I thought aloud, reflected on my experiences and feelings, and sometimes agonised over my role. I also puzzled over the relationship between my various records. In October 2006 I lamented:

I haven’t typed here for almost a month, though I have jotted down stuff in the back of my fieldnotes book, with a very definite ‘Journal’ label at the top of the page. And all the while these journal and fieldnote entries leek into each other like dyes. And I don’t know what it means except that life is like that; one cloth, not a collection of discrete categorizable strands of living, side by side. So I take my hat off to the Latours and Spradleys of this game, who say they can distinguish!¹⁰

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### Why we used the phone

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>[data]</td>
</tr>
<tr>
<td>Family business</td>
<td>[data]</td>
</tr>
<tr>
<td>Funeral business</td>
<td>[data]</td>
</tr>
<tr>
<td>Travel arrangements</td>
<td>[data]</td>
</tr>
<tr>
<td>Superannuation</td>
<td>[data]</td>
</tr>
<tr>
<td>Shopping</td>
<td>[data]</td>
</tr>
<tr>
<td>Incoming call</td>
<td>[data]</td>
</tr>
</tbody>
</table>

### Why we used the computer

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>[data]</td>
</tr>
<tr>
<td>Shopping</td>
<td>[data]</td>
</tr>
<tr>
<td>Music</td>
<td>[data]</td>
</tr>
<tr>
<td>Writing/printing</td>
<td>[data]</td>
</tr>
<tr>
<td>Cards</td>
<td>[data]</td>
</tr>
<tr>
<td>Scanning</td>
<td>[data]</td>
</tr>
<tr>
<td>Email</td>
<td>[data]</td>
</tr>
<tr>
<td>Games</td>
<td>[data]</td>
</tr>
</tbody>
</table>

### Why we used the fax, copier

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>[data]</td>
</tr>
<tr>
<td>Copying</td>
<td>[data]</td>
</tr>
<tr>
<td>Scanning</td>
<td>[data]</td>
</tr>
</tbody>
</table>

Starting date: 8.9.06
Finishing date: 30.9.06

Figure 2.2 The survey of phone, computer and fax use in the Women’s Centre, September 2006
### Table 2.3

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Name (but only if you want to record your name)</th>
<th>House</th>
<th>Using the computer for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.7</td>
<td>1:00</td>
<td>Brenda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.7</td>
<td>am</td>
<td>Shandell</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.7</td>
<td></td>
<td>James</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.7</td>
<td>9:00</td>
<td>Marian</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.7</td>
<td>pm</td>
<td>Gideon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.7</td>
<td>pm</td>
<td>Deline, Rochelle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>25.7</td>
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<td>25.7</td>
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<tr>
<td>25.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.7</td>
<td></td>
<td></td>
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<td>4.7</td>
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<tr>
<td>4.7</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2.3 The survey of computer use in the Council Office, July-August 2007
I did however experiment with collecting lists of domains, in the way Spradley advises.\textsuperscript{11} In an extended fieldnote record of one day in the Women’s Centre I counted seventeen domains and the associated numbers of items in each domain. (Table 2.1)

I then surveyed my dislocated lists with dismay. They told me I was noticing activities more than any other domain, and I tried grouping the activities for what Spradley calls a taxonomic analysis. I also explored the domains for some questions to focus observations. But increasingly these lists reminded me of the parts of a body lying sorted on a dissection table. It disconnected actors from the chains of translations in which they had acted and been acted on. Such ‘steel trap’ methods (as van Maanen called them\textsuperscript{12} ) did not support me in my work of learning to follow actors. I didn’t persevere.

I did however continue to keep lists, usually in designated parts of my A5 note books. These lists attempted to keep track of groups: groups of people who had signed up for internet banking, had opened new accounts, had borrowed money, or who owed money to our iTunes account. A makeshift stapled book was kept in the iNet café tent, where teenage users recorded their own iTunes purchases and how much they owed or had paid.

\begin{table}
\centering
\begin{tabular}{|l|c|}
\hline
Kinds of places & 25 \\
Kinds of groups & 5 \\
Kinds of people & 39 \\
Kinds of relationships & 3 \\
Kinds of time & 32 \\
Kinds of activities & 265 \\
Kinds of informal groups of activities & 4 \\
Kinds of formal programs & 2 \\
Kinds of things objects can do & 13 \\
Kinds of objects & 60 \\
Kinds of intangible objects & 5 \\
Kinds of changes & 6 \\
Kinds of events & 2 \\
Kinds of things people think and say & 8 \\
Kinds of reasons given for activities & 8 \\
Kinds of problems & 3 \\
Kinds of characteristics & 12 \\
\hline
\end{tabular}
\caption{Domains identified in an extended fieldnote record of one day in the Women’s Centre}
\end{table}

A note about tools

I took with me to Ramingining a Tablet computer on loan from Charles Darwin University. A second Tablet was purchased for the project by the university in

\textsuperscript{11} Spradley (1980), \textit{Participant Observation}.
\textsuperscript{12} van Maanen (1988), \textit{Tales of the Field}, p68, note 4.
November 2006. The first Tablet developed problems and was returned early in 2007 while the second remained with the project when I left Ramingining in November 2007.

Finding and purchasing other equipment became a major part of my work, and the actors, translations and dissent I encountered are the subject of stories to come.

Cameras were a special category. Various manifestations of these small actors accompanied us on all excursions and were never far away when I was in town. I did not rely heavily on their agency however as I had become aware of their power to reorganise any scene in the viewfinder the moment human subjects caught sight of them and I often left it to teenagers who were nearby, usually my past students, to be the photographers. Sometimes cameras were borrowed overnight and came back rich with the traces of ceremony and hunting trips. And they were redolent with faces, always full face, usually solemn and often with the pervasive peace sign.

We downloaded many images and videos onto databases on the iMac computers at the Knowledge Centre when they arrived in August 2007 (through the agency of NTLIS), and made these and many archival images available for anyone to view. We encouraged people to bring old photos from their homes to be digitised and stored and several people took up this offer. These traces in turn drew new people to the Knowledge Centre as news of their re-embodiment spread. And of course we went on taking new photos, many of which, with permission, have been summoned to help tell this story, in print and on CD (Appendix 5).

.. and metaphors

I had been alerted from the outset that metaphors would be important actors in my work, especially the thinking work that may sustain, encourage, enlighten or constrain me. These metaphors most often accumulated on my scratch note pads and in my journal.

In her thesis, *Conversations with the bunyip*, Tamsin Kerr explores the powerful metaphors of ‘edge’ and ‘mud’; messy dwelling places for human-animal coalitions;
things which may be frightful. She draws attention to bridges and walkways, which are commonly used to avoid such places, and she reminded me of the importance and the power of metaphor for approaching them. She also made me aware that if I find myself in messy territory and notice that I’m not actually up to my knees in mud, that I am probably standing on a walkway. I came to see that ANT was for me, at times, just such a walkway .. though it didn’t have a railing

Information, Permission and Expectations

Before returning to Ramingining in June 2006 I underwent an extensive process of gaining ethics clearance from the university, the Department of Employment, Education and Training (DEET), and subsequently from the Northern Land Council. I also sought written permission from Ramingining Community Council. However, this permission had to be brokered by the acting CEO at the Council and I was aware that such documents can be signed by Council members without attempts by the ‘broker’ to find out if the words are understood. (And indeed, when the acting CEO forwarded me the Council letter of approval it came with the dismissive comment: I don’t know if they understand it.)

I therefore went out to Ramingining for five days in March 2006 and talked with a number of the elders. On this visit I met with Yambal Durrurrnga, Richard Bandalil and Dorothy Wiliyawuy. Several other elders were unavailable at the time but I was able to talk with them personally when I returned. I was careful to state that I was returning as a research student and that I would be involved in doing two things: helping Yolngu to get access to and to use computers but also doing research. I could not help but notice the way interest always focused around the former. I therefore went in June fully aware that my permission to be there was given because I was perceived to be coming back to provide a service.

See Figure 2.4 for the Yolnu Matha version of the information sheet which I used along with the English version shown on page 5. See also Appendix 4 for the full version of the information sheets which I made available to particular Yolngu and Balanda in the various institutions of the town.

13 Kerr (2006), ‘Conversations with the bunyip’.
When I returned I was also full of determination to ‘report regularly to the community’. I did indeed experiment with a number of means of reporting.

- I created a PowerPoint presentation describing the project and sharing the results of the initial survey of computers in the town. It also illustrated some of our early uses of the Tablet computer including photos of the day it was used to play cards on the banks of a remote river while people fished and crocodiles swam.
- I created a BLOG for the project (and subsequently found it cumbersome so didn’t keep it updated.)
- I wrote an interim report for a CDU website with photos from our iNet café and used is as the homepage on the Tablet PC, so that it regularly appeared to users.\(^{14}\)
- I asked for time to report on the project at Council meetings and did so four times. I prepared a written report to submit to Council each time, but the last time added a photo summary.
- I started a newsletter from the Knowledge Centre and got two editions out before I left.
- I regularly reminded people, ‘I am writing the story of the computer in Ramingining.’ I did this especially when I was writing down names and notes.

However, I was aware that this level of reporting was not the level I had envisaged at the outset and moreover it did not contain the element of ‘consultation’ that I had

imagined would come easily if I were open about the project. Over the months I noticed instead that people were not that interested in me talking about what I called (to myself) ‘the project’. At the same time I developed a strong sense that Yolngu themselves were gathering the information that they considered important; that they had an idea of what they wanted from me and judged me accordingly. I watched their eyes when I shared written material with them. I saw the looks on their faces when I was speaking at the Council and got the strong impression that their attention was to me, rather than my words; that all the encouragement I received was personal, and it was to do with my grafted place in the town but also with my role as gunga 'yunamirri (a helper) .. somebody working with them to provide a service.

A note on language, orthography and text

Throughout this text I have deliberately used the word town, as opposed to ‘community’ when referring to Ramingining. The term ‘community’ came into use as a deliberate policy during the transitions of the 1970s in which mission stations became towns heavily dependent on social security and government services. It reflects a notion that these towns are homogeneous and that they ought to function like rural white towns in other parts of Australia, where services are provided in community centres, even though those towns are never referred to generically as ‘communities’ and the term is reserved for reference to something which may be happening within them.

I have used two versions of Yolŋu Matha orthography in this text. When I have used words which are now common in English texts about Arnhem Land, (eg. Yolngu), including the names of dialects, I have used plain text and standard orthography. When I have chosen to use a Yolŋu Matha word (eg. bämara) because it carries particular connotations, I have used italics and Yolŋu Matha orthography and I have provided a translation. (See Appendix 2 for notes on orthography, pronunciation and a glossary of Yolŋu Matha words used in the text.) This intermingling of languages and orthography is not just an artifice of this text. It is the way both spoken language and the emergent Yolŋu Matha texts manifest here in Ramingining. Always seeping into each other.
But text itself hides many more decisions. After all, every sentence is a translation. Every word is ultimately an actor and where it sits on the page (and whether or not it is emphasized, capitalised, ‘stigmatised’ or introduced with warnings, like a sub-heading) may carry as much meaning as the placing of a traditional actor on a stage.

In writing this thesis I have agonized over presentation and the choice of words. I have allowed words like agonized to be used along with words like orthography, because I took seriously Law’s request for methods that are vulnerable and emotional. I chose (one side of a) dialogue as the voice for this writing and consequently used footnotes instead of in-text referencing to maintain as much as possible the sense of continuity of the narrative. Sub-headings also went for this reason, but were then allowed to sneak back in, right justified, italicised, in a handwriting font to say,

*Look, we aren’t really part of the story here: we are scribbled notes in the margins to keep track of a few ideas.*

I also worried about words and voice for another reason. I was conscious that this story is about Ramingining. I made it about Ramingining. I got its bits there. How much of it should be readable by at least some Yolngu there? I knew the sheer bulk of a thesis would daunt even the most literate Yolngu in Ramingining but I toyed with the idea of not writing any sentence which would potentially be incomprehensible, if taken sentence by sentence. This was a challenge I couldn’t ultimately take on.

But there remained another issue to do with voice. A fellow researcher in another Arnhem Land town expressed it this way.

> [Ethnographers] usually have informants, a bit like feature writers: eg ‘Max entered the cafe with a confident stride and was sitting before I had put aside my notes. Glimpsing them he says ‘so you want to talk about my new book’ … (so easy for them to have multiple voices). But, for both of us, because our informants aren’t always English speaking humans and sometimes not humans at all, our voice of ‘this happened, then this then this, I did this, etc’ can easily dominate.¹⁵

This was certainly my dilemma. So many of the activities I undertook with Yolngu were done with few words. I had only basic *Yolnu Matha* and many of the Yolngu I worked with spoke basic English. Even when Yolngu articulate in English worked

¹⁵ Christian Clark, private correspondence.
with me, we often did so with few words. It is a blessed attribute of Yolngu life! Many times a whole computer/internet transaction took place with no more said than, ‘Are you busy?’, ‘Transfer’ and various versions of ‘Bilin’ (finished). I was less practised in this art and so too often it was my words and perspective which were used to recount an event.

Humans however, were not the only actors that needed to be accounted for, as ANT represented an emancipation of the material in accounts of our sociotechnical worlds. And however readily I grasped after this idea, in practice I found it hard. I was not used to acknowledging the agency of things in the way I spoke. I was not used to others doing it. My lingua franca was aggressively human centred. So while ANT was working hard to bring about this balancing act, I had to struggle to embody it. This struggle shows in this thesis.

For a while I tried hard to remove its traces; to present the outcome of a successful transition in which I had learnt the art of allowing material actors to express their agency. Eventually I gave up. I allowed a valid role to the traces of this struggle. On the one hand, I allowed the text to evoke for my readers something of Ramingining as I (Anthea) was encountering it, even seeing this as essential, since certain stories needed to carry with them any legitimacy I had in telling them. But on the other hand I also allowed the text itself to keep traces of the gradual quietening of this voice, and the gradual emancipation of other voices, both human (especially Yolngu) and non-human, in particular the voice of the computer. The text echoed in its own struggle the struggle these ‘othered’ voices have always experienced.

This is so important I will say it one more way. The voices here, including my own voice, are a mirror/echo of how it often looks and sounds (around Balanda) in Ramingining, but of course they do not represent any sort of natural hegemony or order of things. This thesis will say (in time), Yes, this voice was loud but now listen to some other voices, answering back. And this dialogue between a louder, human (often Balanda, often my) voice and the quieter, Hey, remember us! voices of the vast assembly of things (and quiet people), is a vignette in itself of the challenge inherent in what ANT proposes, in liberating those voices.
In all the ways described above I endeavoured to make traces of the actors I was following in Ramingining, including traces of my own agency, but I could not ultimately record what another researcher might see and hear, if they were following me. That would be somebody else’s burden. However, because of my complicity in everything I wrote my traces are always there, even when I wasn’t trying to be reflective. Even without following me on foot, it is possible to follow these traces and watch me at work.

Here for instance is a set of such traces. It is an extended account of a day in July 2007. It is not typical in the sense that on this day I am largely involved at the interface between Yolngu and a training program being provided by external trainers and only offered three times during the year, for approximately three days each time. However it does represent a typical role, in that I am working at (beavering away at) the interface between Yolngu residents and Balanda services. It is a vignette of the way we all plied ourselves around the IT affordances of the town; how we all (human and non-human actors alike) performed those affordances and the interface itself.

In the account the subjects of the sentences are very definitely human (and because we are following the researcher it is usually me) despite the ubiquitous agency of the many non-human actors which conveyed, facilitated, blocked, engaged, frustrated, nourished, sheltered or excluded us. I have already said something about this issue of voice, but it is also an issue of focus, addressed in passing by many writers\(^\text{16}\) and in other accounts in other chapters it will shift.

In subsequent chapters also I will sometimes introduce people by their own names, when they have specifically asked me to use them, but in this account anonymity is important. I have therefore changed names and possibly gender, but as it is not appropriate for me to reassign Yolngu pseudonyms, I have instead used mälk (skin) names for Yolngu and reserved English names for Balanda. (See Appendix 3 for a

list of mälk names and commentary on the mälk system of naming.) Names will thus clearly indicate the Balanda and Yolngu players in this account as it attempts to ‘follow the researcher’ for a day.

Thursday 11 July 2007

I have been finding it harder to emerge from my van these cold mornings. When Star (my dog) won’t let me put her off any longer I find Wämut is at the back gate. Did he wake me? No? Have I had my breakfast? No, but bäydi (it doesn’t matter).

He wants another set of fax banking forms for one of the credit unions. I say I’ll get them and drop them over soon. I will have to get them from the Knowledge Centre, but as he is my neighbour and lives half way between my van and the Knowledge Centre portable, it won’t be a chore. I go inside and bring out a sheet of his writing, given to me just two days ago, practising his English. I hand it back happily, able to say it is terrific and just a few corrections. Like here, capital E for English. That’s what I wanted, he says, and takes it away to read.

I am thoroughly awake now and start domestic tasks .. my morning prayers to the Balanda god of appearances. I feel shrived as I stop for some breakfast, eating it over a text. I wish I could stay and read, but an IT training team is in town and I have to meet them at 10.00 .. hopefully with some clients I’m going to pick up at the Women’s Centre.

But when I get to the Women’s Centre I find only Wamutjian the coordinator, with her Balanda co-worker Jane. Wamutjian tells me she isn’t going to training today, she is going to help yapa (that is, Jane whom she is here calling sister).

I ask about another sister, who was also planning to come to training today, but she replies, Maybe yalala (later).

I don’t push it. I pushed hard enough yesterday. But I do ask two favours: Can I bring a survey sheet like the one we did here last September, on the way the computer, fax and phone was used? Yow’. And (a big favour), could I borrow one of your new tables? I add that I have been jealousing for one, (lapses into a local tendency to use Yolngu grammar with an English verb). Over in our cramped Knowledge Centre we have crappy tables which wobble and filing drawers which won’t open unless you plant your feet and yank with all your might. I could have ordered more by now, but that would have involved dealing with some delicate Balanda politics at the Council so I am jealousing for a loan of one of the three new desks which have just arrived here. They say maybe .. and they will think about it.
I drive down to the Resource Centre with an empty car. Inside I find the trainers, Jill and Steve, all set up, waiting, with no students. They tell me there has been some trouble overnight - with boats - and everyone is involved or away.

Outside I find one of Wämut’s brothers. I have a mail package for him in my bag. He’s been waiting for it: a replacement TV remote I ordered for him a month ago and as he’s paid me cash, I’d been getting worried. I grab him and whisk him into the classroom to meet Jill and Steve. And as always he is wonderfully polite, and Yes, he would be very interested to do some training, but just now he is busy. Maybe this afternoon.

I see Ńarrtitj and Galikali and I hail them. They have come for license djäma (work) which I know is not on today, so I try to recruit them. They are both ex-adult education students of mine so I think I am in luck. I take them into the classroom and almost sit Galikali down. Ńarrtitj escapes, saying he’ll come back later. I leave Galikali in Jill’s care and head for town.

I consult my list of folks who said they were interested last week and fortunately I have a few house numbers. I park and go up to a house where two kids call out my name. One of them is sitting on a play structure made from two big rubbish bins. A man comes to the door and I ask for Gutjan. She’s at TCU, the credit union, so I drive back to the Council building and find her there, with a small group of women waiting for TCU to open. I invite them to come and see the computer training class. Gutjan agrees and with two kids piled into the car we drive to the Resource Centre. She comes into the classroom and says, Yes, she’d like to come this afternoon. As I drive her back to the Council I say, Is there someone to look after the children? (I am thinking of Wamuttjan’s sister yesterday and how we lost her because I wouldn’t let her take a small child with her. I later realize my mistake and take a box of kids’ books.)

At the Council I go in and talk with Amanda, the CEO, about the urgency for the new tables at the Knowledge Centre. She had been convinced the trestle tables I’d bought wouldn’t be strong enough so there is almost an ‘I told you so’ note to her reassurance that yes, she will find the order book. I remind her about the satellite which is still not talking to the computer in the Knowledge Centre (both inherited from the old Council) and she gets me the disc, prompting me to look under the keyboard of her old computer (which is now the public Council computer) for the satellite coordinates.

I go over to Jo’s desk. She is responsible for Council IT. I ask if it will be possible, some time, to see the account records for this public computer. I have asked before, about records of internet use on it, and she has seemed quite positive that such records exist but has never offered to get them for me or show me how to do it. It hasn’t felt easy to ask. Now she tells me the machine has crashed and everything has been wiped. She has had to reinstall it.
Anthea: But the records aren’t in its memory. They are from Telstra.
Jo: I’ve never seen them. (Then reconsidering ..) They refer to four computers.

Bugger. I hadn’t thought of that.

Anthea: So I’ll have to find another way to monitor its use, now (the Yolngu receptionist) isn’t here. I can’t be here myself, because then people come and ask me to help them..

I look at her, but she affects not to have any ideas or even a reply. I am used to this so I move away.

As I drive away from the Council I see Bulany walking towards it, still with painted face from a ceremony and now with a black plastic bag over his shoulder. I pull up to ask if he wants to do some computer training (which he has often asked me for in the past) but I notice he is walking a little strangely, almost staggering as if he is incredibly tired. He says he isn’t really free just now and that it is meat in the bag.

I drive around to Banjadjim’s house and find her sitting outside. She has put her name on our list of prospective students, and yes, she’d like to come now. She asks if Bulanydjan can come and I think she says Bilinydjan. Sure I say. Bilinydjan’s name is also on the list. She is my jam-making buddy and already competent on a computer. They get in and I learn Bulanydjan is at ALPA, the store, so we drive via ALPA and see her coming out, with a big brown bag in her arms and a child in tow. Yes, she’d like to come but she has to eat first.

It is about 11.00 by now. We drive on down to the Resource Centre and find Galikali is still there and Nyaritj has returned to the class. I go and work with him. It is like our old classes when I was coaching here, but a huge step on. He opts not to do internet, so I suggest Excel. Steve and Jill have written exercises for us to work through. He struggles with his eyesight so Jill offers him some 1.0x magnifying glasses, but they don’t help. He tries his own, but puts them down. Long distance, he says. Jill suggests we scale up the screen to 150% and shows us how. It is great. We work till 12.00 when the students leave for lunch.

David, the CEO of the Resource Centre, comes in and he and Jill, Steve and I talk about the future of this program, especially the ‘Train the Trainer’ bit they are planning. Steve tells us they have lots of money which has to be spent before Christmas and that maybe they can start here in Ramingining. There has been terrific interest in the students they have had so far. David and I come up with names for folks we think would do well. One in particular is about to lose her job at the Kava shop when the license runs out.
I race off, determined to find some more students for the afternoon. I head for Army Street and see women sitting with ńjarritjan outside her house. I park and walk over, asking for Wāmut (brother to Wāmut who came to my van this morning). They point around the back of the house. There I see six men sitting in the shade. I enquire with a hand signal if it’s OK to come closer. Yes, they call me. I recognize another brother, but not the other faces. I squat down and tell them about the training, especially the ‘Train the Trainer’ program and add, This is important for our community. They nod and seem very interested. As I leave I hear the word, Marrkap’mirri! (A term of endearment.) And wonder if they are referring to me or the idea of the training!

Around the front of the house ńjarritjan uses her hand to ask: What was that about? So I go up and tell her and the two young women with her. Yes they are interested too.

As I walk away I see there are more people up behind a neighbour’s house so I walk up there and as I approach the group, which I now see is playing cards, Gamanydjän stands up and greets me enthusiastically. I tell her about the training and she seems to tell me she will come this afternoon. We have done computer work together before and she always seems enthusiastic.

I go back to the car heartened, thinking, Gosh, I should be calling in at every house! I see folks on another veranda and head that way. I stop outside and call, Do you want to come to training this afternoon? Maybe!

I head back to the van, thinking I’ve lined up enough potential users! The trainers only have four computers after all.

I eat a sandwich hastily over my fieldnotes, madly trying to keep tabs on the morning. I miss out heaps and have to go back and stuff it into the margins. I then notice that it is after 1:00 and at first I don’t worry. The training didn’t get started till 1.30 yesterday. But then I recall the Knowledge Centre. How could I have forgotten! I should have been there to open up for my co-workers. I have the only key. I race over but no-one is there. I open up and notice a small gang of kids going by. Do you want to watch a DVD? Yow’. They flood towards me. OK, help me set up.

Somehow all the chairs and tables manoeuvre themselves out with a bit of help and I grab a DVD. They’ve chosen Iceage II. I open it up and to my dismay the disc is missing. Bugger! I’ll have to replace it; it belongs to the school. We have to choose again. It is ShrekII.
Once it is on I ask two older kids if they will be in charge while I go back to the Resource Centre for a while, and tell them ‘the rules’. No kids in the office and only one to push play when the ads are finished. I get one to show me that he knows what to do and hurry off.

I find Jill and Steve waiting in an empty classroom, yet again. I am apologetic but Jill stops me; they have only just gotten back.

The afternoon goes just like the morning. Me acting as courier and bämara. Gamanydjlan has gone back to her outstation; another brother for Wämüt wants to come tomorrow. When I call for one young woman, another comes instead. Fortunately she knows Gutjjan, whom we pick up on the road on the way.

I leave them with Jill and Steve who are already working with three CDEP workers. I head back to the Knowledge Centre where my co-worker Bilinydjlan has arrived and a bevy of kids are now watching Ten Canoes. Another group seethe around the two computers. They want to use the internet on the IBM but initially I say, No. My bill was too high this month. Without our satellite connection we are using dial up lines on two laptops, one paid by the university and one personally. I open up an unfinished task on Excel from yesterday and my other co-worker works on it with one of the kids. Kids gravitate to the Tablet and I keep opening up Corel Painter and they keep turning back to iTunes. The all too familiar songs now saturate our afternoons!

Bilinydjlan suggests that she go and buy icecream and I agree. We have been planning this as a school holiday treat, funded out of our sale of tea and coffee, but the last time I suggested it no-one wanted to go or even accompany me to get it. So I’d said, OK, bāŋu (no) icecream and gone off in a mock huff to do something else. This time she is one step ahead of me. She goes through the cash book to find out how much it would cost.

When she returns I eat my icecream as avidly as the kids, making a point of taking it out of the computer room, where food isn’t allowed. Our other co-worker is eating hers at the computer. When I remind her she holds it out at arms length and continues to type with her other hand.

There is a flurry of packing up just before 4:00. One of the co-workers stays till the end, turning off the computers and putting things away. I drive down to the Resource Centre passing Gutjjan and her friend on the way home. I pull up to ask, Good training? and she goes to get in the car. You have to take me home! But I have to go there first, I say. She grimaces and closes the door. I find Jill and Steve really happy with their afternoon pupils.

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17 CDEP = Community Development Employment Program
They say they will come back to the Knowledge Centre to work on the satellite problem. Steve spends an hour and a half, and still can’t finish the task.

We find the disc drive on the IBM doesn’t read the satellite software. Steve copies it onto a memory stick via his laptop, transfers it to the IBM and runs the installation. He then searches for the software and has trouble finding all the bits and navigating through it. He seems optimistic enough and seems to be making sense of the endless pages of instructions and prompts but keeps coming to stops, like prompts for a password for an account for a ‘Joseph Phillips’. He was a CEO here years ago! Just before 6.00 I call Amanda on my mobile and as usual she says it shouldn’t be hard, and that she has already logged on once before … and that she is sure we can use Joseph Phillip’s account and get a new password … and that Jo has gone home. But in the end says she will come over tomorrow. Just call her when I am there. And then I wonder how mad I have been. Of course she has to be here. Surely only someone with her authority, or Jo’s, can set up a new account. Or if we use an old account, only Jo has that information. Why did I not remember this? Why have I let Jo put me off for so long?

By now Steve is sure we are very close but that the last step involves getting a new disc from Telstra with a new ‘commissioning key’. I remind him the IBM won’t be able to read the new disc either and he shows a rare sign of chagrin! We pack up and like nearly everyone else today, we say, Tomorrow!

I recognise in this account of my (sometimes feverish) activity in what I have called an interface between Yolngu residents and IT resources - largely managed by Balanda - that I am acting out a concept, a particular kind of behaviour that Oliver de Sardan is describing in his definition of the term ‘development’. He calls it

... a sum of the social processes induced by voluntarist acts aimed at transforming a social milieu, instigated by institutions or actors who do not belong to the milieu in question, but who seek to mobilize the milieu, and who rely on the milieu in the attempt at grafting resources and/or techniques and/or knowledge.18

In undertaking this research project I had never shied away from the idea that I would seek to intervene in the status quo in the town, with respect to access to computers and their use, so I felt no value judgements in this description. However I could not be unaware of the history of intervention in remote, Indigenous towns in Australia. Moreover, in June 2007 we became immersed in the controversy and the

18 Olivier de Sardan (2005), Anthropology and Development, p24-25.
sweeping changes which were introduced by the Federal Government’s notorious ‘Northern Territory Intervention’. I sat through a number of ‘consultations’ regarding the changes, conducted in the town by public servants representing both Federal and State governments. I listened to the elders rising to the microphone one by one to try and articulate their confusion, their anger and their conviction that they knew what they could do about it. They believed in democracy. They would vote this government out. In their speeches they often referred back to the past, to past changes, promises, disappointments. It was a powerful reminder to me that the work of ‘development’ in this town had a history, a reputation and a responsibility.

In other accounts, on other days in other chapters, I am less proactive in my work, and spend most of my time reacting to requests for help. Again, at other times I am becalmed in what Appelbaum has called ‘the Stop’. At these times I was grateful for an academic sanction for this debilitating condition, and also for Law’s metaphor, ‘slow methods’.

Such means probably included the many activities whose only written traces were scribbled references in my daily log. ‘Gardening at van with kids.’ ‘To Mangbirri with Wamutijan et al.’ ‘Airport for Banjadidjan.’ ‘Kids to Djapidi (the local swimming hole.)’ ‘Didges and bark sheets with Bulanydjan.’ ‘Bulany to Walkabimirri.’ ‘Funeral at Yathalamara.’ These were the activities which became the ligaments and joints of my days. In them we shaped and performed my adopted relationships in the town, without which the rest could not have happened.

A mutual interrogation

I said at the outset, that in the course of this field work a mutual interrogation took place between the ANT actors I took with me to Ramingining, and the life of the computer there. As I grappled with the vocabulary and insights of material semiotics I tried them out on the world around me, and they worked on each other, evertting each other. This thesis tells that story and continues it. It draws more ANT (and other) voices into this process. For instance, I am grateful to Helen Verran and in turn, to Marilyn Strathern, for their use of the word ‘evert’. Verran holds it against

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20 Appelbaum (1995), The Stop, pxi.
the idea of ‘decomposing’.\textsuperscript{21} ANT has always been clear that it is at times of composition or decomposition of networks that we get the best chance to see what actors are up to. But Verran draws into this idea of decomposition the sense in which Strathern uses the word evert.

In Strathern’s account of early encounters between white men and a group she calls ‘Hageners’ in New Guinea, she tells us that the Hageners were initially confounded by the white men and their planes and radios (their behaviour was too consistent with that expected of apparitions such as the sky beings).\textsuperscript{22} It wasn’t until the white men produced pearl shells that the Hageners recognised them as people. Because, Strathern says, for the Hageners,

\[ \text{forms appear out of other forms, that is, they are contained by them: the container is decomposed, everted, to reveal what is inside.}\textsuperscript{23} \]

Pearl shells were something that constituted Hageners, and now it seemed, these white beings too. They must be human, after all. As Strathern says, ‘Hageners were confronted with an image of themselves.’ And again, ‘only a relationship can make a relationship “appear”.’\textsuperscript{24}

In Ramingining, it was this recognition of ANT being enacted, that made a theory come alive for me, just as the Ramingining that I now saw around me emerged through these enactments. As I read about material semiotics I learnt to understand what I was doing and seeing in new ways, which in turn engaged with what I was reading. ANT recognised itself in Ramingining and Ramingining as I saw it, recognised itself through ANT. Relationships making relationships appear. A mutual everting.

In its Latin root, everting means not just to turn inside out, but to turn over. It carries the sense of turning a page, of carrying the story forward. As a fellow student put it,

\textsuperscript{23} ibid. p249.
\textsuperscript{24} ibid., p250-251
'ANT is not an *a priori* theory you apply to Ramingining. It is evoked here and lives on as it is redone.'\textsuperscript{25} Or as Gad and Jensen have said:

\ldots ANT is a transformative entity, which one teaches and is taught in different settings. This is far from the notion of passive theory, which one can learn from a book and then apply to everything. Instead ANT may be viewed as a vessel of intellectual resources that can only bear fruit in specific constellations with empirical matters.\textsuperscript{26}

**An overview of this thesis**

*Following actors and meeting the ANT mob*

In chapter one I began the story of how I became involved with the network of researchers, their ideas and vocabulary, that I subsequently brought to Ramingining as my bämara mob. This network which I tapped into and enlisted for my own purposes, was already such a well known network its name had contracted to an acronym: ANT for actor-network theory; its mantra, ‘Follow the actors!’ But the chapter also tells what other networks I was stepping into by becoming involved in an ethnography of the computer in a remote Indigenous town in Australia. Who else was interested in such things?

*Following the researcher*

In this chapter I have described the formal and informal methods which I used to undertake participant observation research in Ramingining between June 2006 and November 2007. I have described one day in my work, endeavouring to convey a sense of the milieu, the actor-worlds, in which we lived and worked. It begins to map out the story of what it’s like, for Yolngu, to get access to a computer in Ramingining and for a researcher to take seriously Latour’s advice about travelling slowly, on small roads, and paying the full cost of our displacements. This chapter also posits this thesis as a mutual interrogation between ANT/material semiotics and the story of computers in Ramingining.

\textsuperscript{25} Conversation with Christian Clark. Others would agree. See the conversation with a hypothetical student in Latour (2005), *Reassembling the Social*, p141. See also Gad and Jensen (2009), ‘On the Consequences of Post-ANT’, p21

\textsuperscript{26} Gad and Jensen (2009), ‘On the Consequences of Post-ANT’, p21.
In chapter three I introduce Glen and Daisy, (using their real names at their request) and we follow them as they negotiate the complex network of heterogeneous actors which constitute banking and money management in Ramingining. We get to listen to my dialogue with some of the ANT scholars as I learn to encounter Ramingining in these terms, to identify actor-networks as emergent and co-productive and to watch (im)mutable objects, intermediaries and mediators at work.

The story adds to the record, begun here in chapter two, of the vast amount of work which holds each day in Ramingining, in place, in the form in which we recognise it.

In chapter four I focus on place as an actor, especially the places represented by the Knowledge Centre and the iNet café in a tent. We watch the computer searching for a place for public access. We see actors attempting to enrol others; there are successful translations and dissidence. It is what ANT has called heterogeneous engineering. But while the classic ANT discourses proved useful in working with Glen and Daisy, I find that I now need to explore some ‘After ANT’ metaphors and take up its concern that we engage in both epistemology and ontology when we are grappling with complex sociotechnical settings.

In chapter five I then focus on another ANTa concern, about ‘othering’ and use the statistics I collected to ask, not just, what patterns are visible in what happened, but also, What didn’t happen? Who wasn’t there? What got left out? By following actors, as ANT advises, I show some of the processes by which statistics become disconnected from the networks in which they were made and in so doing I leave a set of traces which may do more useful work in policy making.

In chapter six I focus on experiences in Ramingining which address the question of durability and experiment with two ANT approaches to an answer. I try out Law’s suggestion that durability resides in architecture and use Latour to explore the idea of
strong and weak ties, and the way choices map ‘what we are most dearly attached to’. It creates an opportunity to revisit some moments of dissidence, of times when things just ‘didn’t take’ and from there to raise questions which will be taken up in the next chapter, about what this might mean for ‘how we should behave’.

_Sitting down with the actors - facing ourselves_

This penultimate chapter thinks about creative responses to Law’s concerns about research. What have the stories told in this thesis said about how we ought to live and the kinds of people we want to be, as say, researchers, interveners or ‘development agents’ in an Indigenous town? It also looks around for what others are doing that might be relevant to these questions.

_A computer speaks_

But finally, I let the computer speak for itself. It tells about its life in Ramingining. It tells how it is doing, where it hangs out, with whom, and what they tend to do together. It identifies itself as multiply material, productive and emergent.
Chapter 3 - Following the actors: Glen and Daisy

No theoretical construct, the stop is an actual moment, the moment of poise. … It shuns the spotlight yet exerts a definite and important control over what takes place. Furthermore it gives us a key to a deeper engagement in a meaning that unfolds our lives. For it offers a choice. Either to remain habit-bound or to regain a freedom in one’s approach to an endeavor. The stop is the advent of an intelligence of choice. Appelbaum 1995, p xi

This chapter takes seriously warnings about slow methods and the need to travel on small roads, by foot. And sometimes even to stop. Annemarie Mol managed to evoke this necessity in her account of the curious object, ‘atherosclerosis’ in a Dutch hospital.¹ As she induces us to slow down to the pace of weary, painful legs trying to climb a set of stairs, so too it is necessary to make this commitment to stay close to a family in Ramingining as they endeavor to get access to money in their bank accounts, and to negotiate the choices inherent in every ‘stop’.

This chapter begins with their story. In it, Glen Dhamarrandji and Daisy Gaykamangu, their daughter Evonne and I are present using our own names. Other human actors are participating through pseudonyms. The Yolngu pseudonyms are mälk names as described in Appendix 3.

On telling this story I begin to explore the vocabulary and concepts of Actor-Network Theory, for their usefulness in encountering the complex heterogeneous networks of people and things in Ramingining, particularly as they coalesced around computers.

The account begins in early June 2007, at the caravan and iNet café which have now been in use for four months. The beginning of the story is a glimpse into its end, encountering in the process some of the little acts of living which always flocked around the ‘larger’ activities .. those which were destined to leave the heaviest traces in my fieldnotes.

¹ Mol (2002), The Body Multiple.
Monday 4 June 2007

It is mid-morning and I’m out by the road letting Star, my dog, have a wee and a chat to her friends, when Daisy and Evonne come by with Evonne’s baby Narritjan. I ask them where they are going and they indicate the caravan. They have come often over the last week; we have participated in a long banking story together.

We go into my courtyard through one of its improvised gates. A flotilla of kids are passing too and pause near my gate. Are you coming in? No, going to outstation. Wamuttjan hangs on the gate. Are you going to school today? That is enough to send her scuttling.

Daisy, Evonne and I sit down around the table and a silence settles over us. After a while our body movements ask the question: Nhaku nhuma djä? (What do you want?) Transfer, they say.

We have spent a week getting internet access to Westpac accounts for Daisy and her husband, Glen. We have achieved this for Glen, but we have one more step to go with Daisy’s account; we are waiting for the activation code in the mail to change her daily transfer limit. I have tried to explain it several times before. I try again, and ask Evonne, Do you understand? She shakes her head slightly. She seems reluctant to tell me, No. I try again, with hand movements to show the difference between your own accounts within one bank and another person’s account or bank. But what about her own account in TCU? Same problem, I say. It’s a different bank. You have to have that activation code.

Mail only comes Tuesdays and Fridays, but last Friday there was none, so now we have to wait till Tuesday, tomorrow. The mail comes late. If the letter has come, we will have to find it Wednesday in the incredible piles of mail at the Council office, where old and new mail often diffuse into each other and get handled over and over as people hunt through the piles for the envelopes they are expecting (usually from banks) or hope to find. If we find the letter for Daisy we will then use the activation code to change her limit, and I will have to remind them that the actual transfer will take another twenty-four hours. Thursday or Friday.

My mind goes back to another recent scene, just after we had resolved Glen’s access. I am at the van and Glen and Daisy come by. They approach with more confidence than they did, just one week ago. What we are about to do we have done before. I know how to read their body language and the few words, ‘Transfer’, ‘Evonne’s account’, and they know how to read me. Our knowledge and shared experience has made us more comfortable. It has given us expectations we can handle easily.

2 TCU = Traditional Credit Union, the only banking facility in the town.
Anthea: This afternoon, at the Knowledge Centre. I'll be there 1.00 to 4.00.
Glen: One o'clock..

There is a slight hesitation, as though there is some ambiguity in what I have just said so I repeat the time. They are waiting for me when I go over at five minutes to 1.00. I unlock the door with a key attached to my belt. I turn on the light and the air conditioner and they transform the small, dim, stuffy space. Glen comes in and sits down, Daisy following but sitting further from the computer. I take the lead from the phone and plug it into the back of the laptop which is sitting on the table. I open it and switch it on. It blossoms into life (but without that little tune. It is an old IBM with an older version of Windows and no built-in microphone) and I start to talk about what I'm doing.

Anthea: I have to connect to the internet, through this line. Dial. See, it is connecting.

Glen sits a chair's width away. I indicate he should move a bit closer to the computer.

Anthea: See, it says connected, so now we go to the internet. Ω is the internet. Two clicks.

As the internet screen appears we slip into a procedure with an albeit brand new familiarity. Up comes the Westpac screen, the prompts for the customer number and password. Glen has unfolded a small piece of paper we have both written on, with his numbers. I have encouraged him not to write his password on the same piece of paper and we have torn up copies of it written on other bits of paper, but he has written it anyway. We log on and easily follow the steps. Evonne's account is now in his list of payees.

The whole procedure, the internet, the computer, the Knowledge Centre space, the van where they found me, and we, too, have all become well behaved actors in a scene we are re-enacting and we know how it goes. All the bits have worked as we expected and so, although we feel a little trepidation and then relief, there has been little energy expended. The goal, moving the money to Evonne’s account, has stayed in focus. They don’t tell me this time, as they did another time, what it is for. Then, with some excitement, they had told me it was for Alex’s initiation ceremony. His dhapi. Nor do they spell out how they will get the money from Evonne’s account, but it is a TCU account. We have a TCU branch in Ramingining.. our only bank outlet. They can withdraw money there. Or at the ATM at the store, because Evonne has a card for this account.
But why were we just a little nervous, and relieved when it worked? That is because it wasn’t always so. Today all the actors have behaved predictably and together behaved as what Latour used to call a black box, and more recently, an intermediary. Last week, we would have had to describe them differently, as mediators.

Here is Latour in *Reassembling the Social*:

An *intermediary*, in my vocabulary, is what transports meaning or force without transformation: defining its inputs is enough to define its outputs. For all practical purposes, an intermediary can be taken not only as a black box, but also as a black box counting for one, even if it is internally made of many parts. *Mediators* on the other hand, cannot be counted as just one; they might count for one, or nothing, for several, or for infinity. Their input is never a good predictor of their output; their specificity has to be taken into account every time. Mediators transform, translate, distort, and modify the meaning of the elements they are supposed to carry. No matter how complicated an intermediary is, it may, for all practical purposes, count for just one — or even for nothing at all because it may easily be forgotten. No matter how apparently simple a mediator may look, it may become complex; it may lead in multiple directions which will modify all the contradictory accounts attributed to its role.3

The week before all this we were in a tangled web of mediators.

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Friday 25 May - 10.20 am

Glen, Daisy, Evonne and Nharrtjak come to my van. They indicate they want to transfer money from Glen’s Westpac account to Daisy’s TCU account. I make the inference that Glen doesn’t have a card he can withdraw money with at the ATM in the store but that Daisy can withdraw money from the TCU branch here in Ramingining.

When they make this request I notice with relief that they are wanting to transfer money from Glen’s Westpac account and not Daisy’s. I recall the hours, over several days, back in February that Amanda and I spent unsuccessfully trying to help Daisy get access to her Westpac money. In the end we were told she had no choice but to go to a branch. The nearest is Nhulunbuy and at that time of the years it cost about a thousand dollars return to go there.

But this is a different request. I don’t know anything about Glen’s account, so I give one of my standard replies, here at the van. For fax banking you can go to the Women’s Centre or Council. I don’t have a fax here.

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But it doesn’t end there. They linger. They have more to tell me and at some stage I recall, Westpac doesn’t do fax banking. I find out Glen has a three-digit telephone banking access code, (which could be used to get an internet banking access code online), so I realize I may be able to help. I say, See me at the Knowledge Centre this afternoon. I don’t have a computer here just now.

What I mean is, I don’t have one easily available. I am just then using the Tablet computer in my van. That is, the Tablet which people often use for internet banking here in the tent next to my van. I am using the Tablet because my own laptop is in Sydney getting fixed.

They do come to the Knowledge Centre that afternoon and I try to use Glen’s three-digit code to register him for internet banking. We get no further than the first step. The registration program rejects his three-digit code, so we have to phone the number given on the screen. I tell Glen and Daisy the phone costs fifty cents and they say they will bring the money later. I write it down.

On the phone, we learn that Glen has failed a phone ID process at some stage and has been suspended from telephone banking. But the person on the line is helpful. They suggest calling his branch and we are given the Nhulunbuy Westpac number. We get Jan, another helpful person, and she tells us we can send a fax after all, with all the ID details we can muster, and his signature, and put our request in writing. I prepare a fax for them and include his driving license number. Glen carries a wallet with papers and cards, including his license. I add my mobile as a contact number. I read through the fax with them and they take it over to the Council to send. Make a copy first, I say. This green paper won’t fax well.

At 3.30 Jan calls us. She can’t find Glen on the records. Does he have another name? What is his customer number? I realize we left that off the fax! I find the family at the Council. I try to call back on my mobile but the reply function takes me to a number which is not connected. I try again and then think, Bugger, I’ll have to find the number, which is back at the Knowledge Centre. But just then the receptionist at the Council calls to me, to tell me the number is on a piece of paper on the desk. I call again, twice, and get on to Jan. It is OK, Glen has just called. (That is why they had the number on the desk!) She is working on it now. But by now it is close to 4.00 and it is Friday. TCU is closed for the day, and the week. Monday, says the family, and moves off, slowly.

That evening I get a delayed voicemail on my mobile. It is Jan, at 4.45 pm. She needs me to call her before 5.00 or on Monday. There is another problem with account numbers. The one Glen has given isn’t working.
Saturday 26 May - 9.30 am

Glen and Daisy come by while I am on my mobile. They hand me one dollar for the phone over the gate. It is all in five and ten cent pieces. I tell them about Jan's message, that we need to call on Monday. There's a problem with the numbers. I say, When your ID is fixed I'll help you to get an internet banking access code. Then it will be easy.

But I remember the problems we had with Daisy’s Westpac account so I hedge my optimism, and add, You may have to go to a branch, like Daisy. I ask her if she has changed her Centrelink account to TCU from Westpac. No, she indicates. Good for saving? I say. They both agree!

Monday 28 May - 9.30 am

Daisy, Glen, Evonne and Ngurrtnjarrtjan arrive while I am in the middle of a scary download on my laptop which has just arrived back from Sydney via a succession of couriers, phone calls and favors. I am updating my virus protection and have never bought software this way before. I am nervous. I scurry in and out of the caravan between my guests and the laptop. I call Jan on the mobile and she says she will try the account number (for Daisy) again and call me if it doesn’t work. I make cups of tea and discover I have met Glen’s mother. I know her from computer workshops at the university. She is an impressive computer user. We are excited to find these connections. Glen tells me more about his family and their country.

Later - 11.00 am

Daisy and Glen return to the van. By now I am trying to update my email files on my returned computer .. deleting ruthlessly. They tell me the money hasn’t gone through. They have just checked at TCU. I feel a stab of disappointment, recalling the length of the February saga. Then Glen comes up with a possible explanation. Maybe it takes two days. Of course! I forgot!

I get cold water and we sit and talk .. about their son who has dropped out of school, the importance of being strong in Yolgu Matha and English and about the banking and money problems people are having. I say that internet banking may be the way to solve these problems and that we will get Glen’s access code at the Knowledge Centre this afternoon. Daisy indicates that she has a new three-digit code too.

Still later - 1.00 to 2.30 pm

They come to the Knowledge Centre. We assume that Glen's ID problems have been solved and I try again to register him for internet banking, but his three-digit code is still not

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4 Inaccessible accounts were sometimes created in attempts at saving. This was in response to the enormous pressure which any accessible account was under, due both to the general needs inherent in large families and to particular reciprocal obligations. Moreover, the term *humbug* (cadge) was a hint that demands weren’t always held within the acceptable bounds and uses of such obligations.
working. We call Jan and she is busy; she will call back. She calls when we are halfway through the next bit of this story and tells us that the suspension on the three-digit code is a different issue from the faxed transfer request. She will have to organize for it to be lifted and get a new code and fax it. I give her the school fax number because I’m not sure of the number at the Council or the reliability of its machine.

Meanwhile Glen and Daisy remind me that Daisy has a three-digit code too and make signs that we should work on her account. She gets out a little piece of paper with what looks like a customer number and a three-digit code. I am skeptical. I remember February! I ask, and they tell me it is a new number but I don’t find out how or when she got it. They get out a bank statement for the account dated March.

Somewhat disbelieving I enter the numbers into the Westpac online registration page, and they work. We proceed to the next step. She needs her Handy Card so she opens a purse and pulls out a folder with about six cards and a Westpac card, but it’s the wrong one. She will need to get it from home. I do some rapid mental calculations and offer to drive her. Glen can mind the KC.

As we pull out in the car, Daisy, who almost never speaks in my presence, and speaks little English, tries to tell me, I don’t understand much English. I try to think of a way to say, Me too, a là Yolŋu Matha, but let the comfortable silence state the obvious.

When we get back the screen looks innocently unchanged and Glen and I put in the incredibly long number together, but of course we have been logged out and have to start again. I have a lot of trouble getting back to the starting screen, and when we finally do, and get to the questions page, this time it is a different question. Daisy doesn’t need the Handy Card number but needs to know her balance! I ask them if the statement is the last one they got and tell them that we need to know the balance exactly. If we get logged out again I am afraid Daisy’s code will get suspended again. Memories of last time are looming. They have a quick exchange and are sure, the balance is such and such. (A larger sum than that on the statement.) I am nervous. I put in the amount and it works again. We start to choose a password and are sure, the balance is such and such. (A larger sum than that on the statement.) I am nervous. I put in the amount and it works again. We start to choose a password and alas, I have forgotten to prepare them for it. We have a discussion which we have to hurry, because we don’t want to get logged out for delaying. We decide on a dog’s name with the numbers 123. We get through the process, but the screen then tells us it was too obvious. We try again, but the cursor, which has been increasing in unreliability, chooses this time to go crazy. We can’t get though the password selection which requires pointing and clicking on numbers and letters. The screen freezes and tells us we are blocked. I quickly change to the Tablet computer and start again but we are blocked well and truly!
It is in the middle of this that Jan calls us back. She has managed to organize the transfer for Glen and it will go through the next day. I don't pay attention to the details and thank her rather too hastily because I want to ask about our new problems: Glen's three-digit code and this problem with Daisy's password. She tells me she will fax Glen's new code (as told above) but for Daisy's problem we have to call the internet banking number.

But then my mobile starts singing again. This time it's a very deep, confident male voice and he says he's from Westpac and can he speak to Glen. I hand over the phone and Glen proceeds to have a conversation where he only says one word, over and over, Yes. There is some confusion when he hands the phone back to me. Who wants to speak to who now? Eventually we get through to internet banking. We get Bronwen. She is helpful too. We are on a good run!

She has to speak with Daisy and I remember how this was Daisy's downfall in February. That time the woman at Westpac had overheard Evonne helping her mother say her date of birth and so had refused to ID her. It set in train the attempts by both Amanda and I to get her signature through a different ID process, one which she couldn't pass. So with my heart in my mouth I tell Bronwen that Daisy has real problems with speaking English. She reassures me that if she can just get through her ID she will be able to give permission for me to speak for her. She also tells me she will ask her for her access code, so with Evonne on one side of her and me on the other, and her access code on a paper in front of her, I introduce her within Bronwen's hearing and give her the receiver.

Daisy looks nervous, almost trapped. She says, Hullo! Hullo! and after a while hands the phone back to Evonne who hands it to me. Bronwen is understanding. We try again, with me asking the question. Daisy holds the paper away, trying to read it. Evonne starts to say it quietly and I signal for her to stop. Remembering! Somehow she gets to say the three numbers and gives the phone back. Bronwen accepts it! We also have to get her to say Yes, to the question, Can Anthea talk for you? She says, YES! Her body language hinting at the courage it takes.

Bronwen then tells me we hadn't needed to start at the beginning again (when we got lost in the password selection); the computer had registered that we got through the process, even though it wouldn't accept the password we chose. She gives us a temporary password to continue, and we easily get through the rest of the procedure, despite the hurdle of the Terms and Conditions. I have learnt to say, when we get to that page, You can read all of this, about the bank rules, or you can trust them. Everyone says, Trust them! And we click, Accept.
But Daisy is on her feet at this stage. It has all gone on too long. When we finally get through to her account only Evonne is at the computer with me. It shows the amount that they knew was there. Daisy and Glen come back into the room with little Nyarriljan who has been handed from arm to arm throughout this long procedure. They seem pleased but dazed. Glen is wondering about the fax. And they also add that word, Transfer. That’s what it is all about. They want to transfer money into Evonne’s TCU account. Yes, I say, but then my heart sinks. Quickly I go into ‘Manage Your Accounts’ and check the daily transfer limit. It is set to zero. Bugger! I had forgotten. I set it to the next level, click submit and start to try and explain. There is one more step when you use Westpac internet banking. You have to set the daily transfer limit and that involves waiting in the mail for an activation code! One more number! We need one more number. It will come in the mail. Maybe Friday, maybe Tuesday.

I try hard, but I feel defeated. Their body language at this stage is tired and they are turning towards the door. I try to detect signs of understanding. I do detect signs of acceptance: that it is in my hands and that OK, they still have to wait. They ask about the fax again and I suggest they go over to the school to pick it up. They all come back about ten minutes later. It hasn’t come. I tell them I’ll check it later. I try one more time to summarize where we are up to with Daisy’s account and Glen’s transfer, but everyone is turned to go. The baby in arms has been incredibly patient. They all leave together.

Later again - 4.15

I see Glen and Daisy on the road outside the school. They are still looking for the fax and it still hasn’t come. I say I’ll check. That night we end up at a ceremony at the house of family which we are all close to. I can’t recall if I tell them then or not, that the fax still hasn’t come.

It is tempting to say, at this point, And so we continued ‘in this vein’. But perhaps the reader is just tired and not yet exhausted. Daisy and Glen have no such choice; they cannot jump to the end of the story. They cannot get around the obligatory passage point\(^5\) which still stands between them and their money, and what it will buy, including food.

Tuesday 29 May - 8.30 am

They come by the van early, still expecting the fax. And then again at 10.00. I suggest they call Jan this afternoon from the Knowledge Centre.

\(^5\) Callon (1986a), 'Some elements of a sociology of translation'.
Tuesday afternoon

While trying to help someone else with their internet banking problems that afternoon, I have to call Nhulumbuy Westpac, and so I ask about Glen’s situation. Jan tells me there was a problem. Westpac was going to contact Glen. I say, Yes, they have. She tells me that if the outcome of that was OK, what we now need to do is call Telephone Banking and she gives me their number. If they can ID Glen over the phone they will issue a new three-digit code.

Around 4.00 Daisy and Glen come in and we call the number, but while we are in the queue I find Glen doesn’t have his information with him. I hang up. Tomorrow, we say!

Wednesday 30 May - 8.45 am

Early again. I haven’t had breakfast so they join me for cups of tea over the books on the table. We recite names for plants in Brock⁶ and tell fruit stories. We clarify some family relations. We also do some preparation for Glen’s phone ID. He needs his customer number, date of birth and information re his last transaction, which was the one we faxed, so that is easy. If they ask for the balance, I tell him, say, How can I know the balance if I don’t have my telephone access code? He’s a bit wavy on this answer.

I arrange to meet them at 9.30 at the Knowledge Centre, where we do some more preparation for the phone call. We write a list of possible questions and then call. We get Kerry. We have a difficult run of it. She asks a question we hadn’t anticipated: What type of account does he have? It’s written on his statement, amidst all sorts of other numbers and headings - an ‘Everyday Account’ - but he doesn’t know the answer. Kerry resists my help. It gets frustrating and I fear the worst but somehow he gets through. She gives him a new three-digit code and we immediately try to use it to register him for internet banking. But we can’t get it to work! Three times we try but the screen tells us that the number combination (customer number plus three-digit code) is wrong. How incredible. Clutching at straws I say, Maybe it’s because it is new. (Meaning, it hasn’t got through the system to internet banking yet.) We will try this afternoon.

And we do. Glen and Daisy come back and we try the number combination again but it still doesn’t work. We call the internet banking number and discover that Glen has actually been registered for internet banking before. He was registered for three months in 2007. I ask and he tells me, it was a relative in Galiwin’ku who helped him. I don’t find out how it got stopped but presume it happened when his telephone ID got suspended.

We are given a new temporary password and we get through the process of changing it quickly with no more problems. I even find that his daily limit is set above zero. He also tells me the transferred money (from the fax last Friday) has finally gone through. We exchange some expressions of satisfaction.

⁶ Brock (2001), Native Plants of Northern Australia.
Thursday 31 May - 8.20 am

Glen and Daisy arrive early at the van. They want to transfer money. I say I’ll meet them at
the KC at 10.00.

At 9.20 Glen and Evonne come back, because it is ‘nearly ten’. I decide to use the Tablet in
the tent here at the van, where we used to do all our iBanking before we got the Knowledge
Centre. I get Evonne to do it, with prompts. They are very excited. It is for Alex’s ceremony,
they tell me.7

Each stage is exciting too. We get to log on straight away and we find all their family
members listed in the list of past payees. We add Evonne’s name and TCU account
number. They transfer some of the money. It all happens so quickly. It will take twenty-four
hours to go through, the small print says, but everyone seems satisfied.

Wednesday 4 July

This story continued to unfold, day by day throughout June. Both Evonne and Glen grew in
confidence as they transferred money from his account to accounts they had access to here
in Ramingining. But we waited in vain throughout June for the letter with Daisy’s activation
code. Finally we rang up and found her address was registered at Elcho Island. The
activation code had been sent there. A new letter was sent. When it arrived we used the
code to activate her daily limit and a progressive process of transferring her money began,
as with Glen’s, into accounts they had access to here in Ramingining.

Practising Actor-Network Theory

The family’s relief was palpable. They became frequent users of the Knowledge
Centre and internet banking. Their harrowing story of getting access to funds in a
remote town such as Ramingining was not by nature unique. In chapter five the
extent of these activities will be revisited.

Meanwhile, as I scribbled furiously in my fieldnotes and survey sheets to keep pace
with these personal dramas, I also toyed with the concepts and vocabulary of ANT,
‘testing’ it for its usefulness in telling these stories. If I was unlocking a door, to
which I only had a key, or more dramatically when I couldn’t open a door (or we

7 They are referring to the obligatory payment through goods, for the services of those who officiate
at a ceremony, that is those who are in the right relationships and so are able to perform certain acts
associated with the rites, to paint the designs, sing the right songs and call sacred names.
couldn’t open an account) because a key (or password) was lost, I was grateful for an antidote to the frustration which I would have felt if I hadn’t recognized the agency of keys and numbers; if their materiality and ‘technicity’ meant that they were only a nuisance and that the ‘real’ action here was somewhere ‘social’.. in human failings perhaps. If only these annoyances were out of the way we could get down to business!

Translations

In chapter one I quoted Callon outlining the relationship between actors, networks and translations.

An actor-network is a network of simplified entities which in turn are other networks. The solidity of the whole results from an architecture in which every point is at the intersection of two networks: one that it simplifies and another which simplifies it. It can be translated into other actor-worlds. .. Although simplified into a point and displaced ... it is still composed of associated entities. While these entities are susceptible to being moulded or shaped, they in turn may transform the actor-world of which they form a part. It thus deserves to be called an actor-network.8

While it was helpful (and perhaps trivial) to describe what happens at a locked door with a key, in translation terms, there was nothing trivial, nor innocent, about the banking stories like Glen and Daisy’s, which occupied so much of my time and that of the residents of Ramingining. They were veritably throbbing with implications, and noisy with the voices of the actors involved in the translations. Banks have translated ‘holus bolus’ into their own networks, other functioning networks: the whole worlds of computing and telecommunications, and the western idea of a number as an identity.9 Westpac, in this story, also translates Glen and Daisy into little suites of numbers: a birth date, a remembered balance, a customer number, a three-digit telephone code, account numbers and internet banking passwords. Not just the numbers but the relationships between them are crucial. Glen must be able to produce them all, at one time and in one space, even though that space is only a functional space. If he can, the bank recognizes him as Glen, and equates him with his money. If he passes to them numbers which the computer equates with Evonne, it can then translate the numbers (representing amounts of money) in their computers into numbers in another bank’s computers, which appear on the screen of the

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9 In his Portuguese mariner story, Law too comments on the way one network may integrate other complete networks into itself. Law (1987), 'Technology and Heterogeneous Engineering'.

computer in the TCU room in the Council building here, where young women have been trained to see and recognize those numbers and translate them into cash in hand. They hand it out through the grill, which enacts the space in which cash can be kept safely in a place hungry for it. That cash is then translated at the ALPA store into food.

(Im)mutable mobiles

This is putatively a story of immutable mobiles, of objects created strategically to travel, supposedly unchanged, across other changes whether they be changes in geography or scale or discourse.¹⁰ The people on the phone at Westpac, the Jans, Kerrys and Bronwens, accepted the equivalence the numbers represented to them. We were in our little Knowledge Centre space behind the devastated old Council building with all the stories it entailed for us. They were sitting in some office in Sydney, or Hobart. The numbers traveled, indifferent to this geography and scales. Jan et al went through procedures to convince themselves the equivalence was valid. ‘We’ said we appreciated that, that we understood it; I spoke on behalf of Glen and Daisy. I tried to translate the idea of security into terms I thought they would understand. But we too were translating in another way. The numbers were recorded on various bits of paper, transcribed from old much folded pieces to new sheets, and stored in purses and wallets. (In some stories just in pockets and hands, or heads.) They were recited and rehearsed and discussed.

But in this way, while they were presented to the bank as the immutable mobiles which would faithfully translate identity in a form the bank recognized, they were for us potentially very mutable mobiles,¹¹ in more than one way. On the one hand we were aware of their fragility; they could disintegrate, lose their potency, their ability to identify. They could get lost, forgotten, transposed. (I saw that happen quite often; two numbers reversed, say.) But more importantly, the translation at this end was not number equals personal ID. It was shared family ID. The numbers were commodities with exchange value here. Certainly banks and villains recognize this potential too and hence the massive architecture of the computer security networks,

¹⁰ This concept was developed in Latour (1987), Science in Action, p227. See also Latour (1990), 'Drawing things together', p26.
¹¹ This too is a tried ANT metaphor, most potently in de Laet and Mol (2000), 'The Zimbabwe Bush Pump'.

but here in Ramingining that commodity status is not seen as villainous per se. Potentially problematic, yes, and people have numerous and fascinating strategies for that, but not the ones banks envisage with their campaigns to encourage people to guard and secretize their passwords. Here people do other things: they create multiple accounts and perhaps keep one number ‘unannounced’, or deliberately destroy the card associated with that account. Alternatively, they may employ ingenious ways to get the bank ATM to retain a card.

Material semiotics

I saw Daisy and Glen, throughout this story, as determined and optimistic and yet always at a disadvantage. As a team, they trudged back and forth between their home, my van and the Knowledge Centre, day after day; their only weapon their persistence and the balance they knew was there in the bank, and yes, their faith in me; their belief that justice exists and that it can be asked for with dignity. They were created mendicant by their relationship to those numbers, their differing skills in English, their limited access to phones and understanding of the protocols of banks, signatures, numbers and computer language. All of these actors in turn came out of those transactions as powerful, as arbiters of what happened next .. and yet, the four of us also managed to reshape some of them. As we sat around Daisy and the phone, miming to her that day she had to pass her phone ID, we did something we had failed to do back in February. We didn’t take away from the bank the role it performs every day, all over the planet, which every client reinforces as they engage in the protocols. However we did ‘undo’ that assemblage just enough to see something of its creation and what holds it together, and to make it work for us. Certainly, at other times we undid it enough to render it useless.

This semiotic relationality was everywhere of course. The network and our compliance didn’t just give Daisy and Glen their temporary dependency, but it also gave those numbers, otherwise just meaningless strings, their powerful agency. It gave the computers their usefulness; me, my ability to ‘help’, and so on.

The most obvious of the non-human actors here were the numbers, and the computers and all their supporting physical networks, but at every touch of these tangible elements we ran into people. And every encounter with people involved us
with more things, both tangible (purses, bits of paper, pens, tables and chairs, doors and keys, cars) and intangible. Languages were obvious actors, but motives too became visible: the money was needed for the ceremony, they said. Sometimes, in other parallel stories, people said things like, Anthea, we’re hungry!

In this story there is an insistence on process and its precariousness. As Law puts it, ‘all the elements need to play their part moment by moment or it all comes unstuck.’12

Certainly there are networks around which have more flexibility than this one, and beyond Actor-Network Theory 1990, the ‘fold’ began to include them: networks that behave more like waterways. But this particular network demonstrated this dependency on each link, again and again. It is a classic heterogeneous actor-network. Then too, it demonstrated that parts of networks can be remade. As Latour meticulously illustrated in *Science in Action* this usually requires phenomenal work, and in our story too, these times of reshaping were laborious and time consuming. It took weeks, courage, coaching, practice, before Daisy and her team were able to convince Westpac that this team was her, Daisy, customer number di-di-di-dah.

*Scales, architecture and the creation of obligatory points of passage*

It is also a classic story of action at a distance, through the agency of immutable mobiles and obligatory passage points.13 Of how the scales of large banking corporations and tiny, tinny, outposts at the end of a phone line, become irrelevant, through the intermediation of the well behaved assemblies of computers and ITCs and understandings and practices to do with numbers.14 It is the agency of architecture. A few of the elements could have been moved a little in time or space, but most of what we did would have been impossible if a piece or a sequence had been swapped around. We were a story, not a lexicon of concepts.

12 Law (2008a), 'ANT and Material Semiotics', p146.
14 Latour calls the process of translating into numbers, of creating ‘a world inside which facts and machines can survive’, metrology. Latour (1987), *Science in Action*, p251. He also develops the idea of scale in his work on Pasteur. Latour (1983), 'Give me a laboratory and I will raise the world'.
And we were never far from the political. It takes very few links in the network to reach events, people, things which have been active in setting the scene for the disempowerment and the dependency of Daisy and Glen on the one hand, and on the other the sense of remoteness and the fragility of the chain I had to tap into to ‘help’ them. At any point of that story I could have veered off on other legitimate trails, revealing the way the Council operated, the events which had left us with such a minimalist internet access point, the events and people and things (the history) which had created the Council in its present state.

Notice new actors have entered the story here. They are not people or material things but discursive concepts: disempowerment, dependency, remoteness, fragility. By giving them a name - by allowing them - I give them a role.\(^\text{15}\) I have enlisted them. I have translated a set of events into a new potential intermediary (or mediator) in the story. They immediately lead us to the periphery of an arena which has another discursive label: political.

ANT was always adamant that it was about ‘how’, as opposed to ‘why’. How networks held together, shaped their components; how they could make a centre and peripheries.\(^\text{16}\) In short, Law says, how differences get generated in a semiotic relational logic.\(^\text{17}\)

I was able to watch this banking story, under the influence of ANT, doing this. Showing how, by going through the actions described here, by acting out the translations:

- this number = this person
- these numbers = money = food
- this space in the Knowledge Centre = an extension of Westpac
- this computer screen = Westpac
- this room which we opened with a key = a safe space
- this action here on a computer screen = a transfer of money somewhere else
- this person (Anthea) = someone who can speak for this person (Daisy)
- this set of actions = dependency (or perhaps, independence, immediacy, convenience)

\(^{15}\) Take the concept of ‘remoteness’ for instance. If I allow and use it, I am acknowledging a reference from where nearness and remoteness is being judged. Ramingining was never remote in Yolngu terms.

\(^{16}\) Law (2008a), 'ANT and Material Semiotics', p146.

\(^{17}\) ibid.
we were all performing the inherent differences in this story, the centre (Westpac) and the periphery (Ramingining).

Eroding dualisms

ANT always insisted that it represented an erosion of foundations, that is, of dualisms such as human-nonhuman, big-small, macro-micro, social-technical.

(They become) effects rather than explanatory foundations. This is not to say that they are not real – they may indeed be made real in practice – but they offer no framework for explanation.18

In this story too, (and the larger story it was embedded in, particularly the story of the Council) people and things had equal power to undo the networks. Keys, leads, numbers, signatures, alliances, moods, beliefs, spaces.

There were big banks and small numbers. Size didn’t matter. As in the games of solitaire which have proved to be our computers’ most successful acts of enticing, it doesn’t matter if the missing card in an otherwise complete sequence is a Queen or a two. Either will bring the game down.

Concepts of closeness and distance were also eroded. Banks translated people in their homes into the vastness of the internet, numbers represented people at a distance; banks spread out and became obligatory passage points for storing and moving money.

But perhaps the most resilient of the explanatory, foundational dualisms is that of the social vs the technical. And in this story it would be easy to slip into this divide. If a person loses or withholds a key, or forgets a number, it would be so easy to argue, Ah, but the human is the real actor here. In response, ANT has taught me to say, No. If a person forgets a password, but not their classificatory relationships, this tells me that the number brought its own affordances .. a difference, into the transaction. The person was not the only actor.

Stability - after dualisms

But if foundations have been eroded, what endures? ANT has steered its work away from ‘why’ and eschewed foundational, stable agent, explanations, but how does it

18 ibid., p147.
deal with continuity? Is it going to endlessly tell stories and not notice the themes? Law asks, What might replace the foundations that have been so cheerfully undone?19

He says that ANT answered this question by addressing architecture and configuration but insists on only ‘relative stability’, which in turn can be located in the material (in the end it is the configuration of the web that produces durability, not the materials themselves); the strategic (deliberate strategies to create durable networks); and the discursive (discourses defining conditions of possibility).20

These are all apposite concepts - ways to translate actors and activity which feel right - in Ramingining. The configurations of people and things and their stories were indeed relatively stable throughout the story told here, though we were able to demonstrate how, with a great deal of work we could shift some of the relationships. And how easily, carelessly, the repetition of certain actions (like the losing of numbers) acted out and stabilized one set of configurations (which were labeled with words like dependent, helping) and undid others (the chain of events which could result in money being withdrawn).

We were in no doubt that the configurations of parts assembled in the computers were essential to their durability; as with the procedures which constituted the banks. And the strategic intentions, the creation of the obligatory passage points which the banks represented, were never questioned. However the discourses which act to stabilize those configurations and strategic arrangements within one setting were shown to be far from stable here in Ramingining. The understandings (the stories/discourses) behind concepts such as personal ownership, material value, the power of secrecy, were all destabilized in these stories. Whatever their role in the intermediatory behavior of banks in say Darwin, here in Ramingining the network is stabilized by different stories, different conditions of possibility. It is possible here to pass passwords around; to be different people over the phone.21

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19 ibid., p148.
20 ibid., p148-149. This question re continuity and Law’s proposal will be revisited in chapter six.
21 For example the time I witnessed a woman quietly, confidently and openly, being her mother over the phone, A5-8 p39-40.
tell these stories as epistemological aberrations in the fixed ontology of western banking. Or to find evidence that ontology is never a given.

During the ‘diaspora’ which ANT underwent post 1990, several themes developed into strong *leitmotifs*. Performance was one of these. It was not a new concept; it is inherent in the material semiotics at the heart of ANT and we have already watched Glen and Daisy, the banks and computers performing the heterogeneous actor-network we called internet banking in Ramingining. But the idea grew in its influence and significance. Law actually calls it a seismic shift.22

Crucial to the new material semiotics is performativity ... we are no longer dealing with construction, social or otherwise: there is no stable prime-mover, social or individual, to construct anything, no builder, no puppeteer. ... Rather we are dealing with enactment or performance. In this heterogeneous world everything plays its part, relationally. ... (all the actors) assemble and together enact a set of practices that make a more or less precarious reality.23

As I have said in chapter one, this understanding has particular cogency in a place where so much is performed, not just in the sense being used here, but in the particular popular sense the word carries. Visual art and performance (in this case music and dance) is used to keep the Yolngu world intact.24 It is an easy move to shift focus to the even more complex and heterogeneous community, by adding in the Balandas, the Government institutions which bring them here, the houses they live in, the services they work through (but which equally enable them to be here).

Obviously, without the daily exercise of the relations between all these ‘new’ elements and the Yolngu, the town, the ‘community’ wouldn’t exist, but its precariousness/fragility is demonstrated daily; you only have to walk into the space (the shifting space) which gets called ‘the Council’, where expectations re the roles one plays to keep something recognizable as a ‘Council’ are continuously rubbing against each other, like a swirling tide in a pool where certain life forms develop the capacity to cling onto other more stable things.

Mail spreads and spills across tables and onto the floor. Telco and Bank logos (usually meaning ‘important’) get stamped with footprints. People sit here and there

23 ibid., p150-151.
24 Tamisari (1995), 'Body, Names and Movement'.
on a continuously moving tide of chairs. Kids wander into spaces where finances are
dealt with. A phone has a sign: DON’T USE WITHOUT PAYING $5. But it is used
anyway. Brochures and newsletters in a language local people don’t read, spill out
of a display case. Someone in the Community dies and tips the balance. Suddenly
there is fighting outside; people carrying knives and axes and spears as symbols of
grief, fear, determination to protect and avenge. Law’s words could have been
generated here, and of course that is a test of their veracity, or usefulness.

**Co-constitution**

We have followed Glen and Daisy as they have endeavored to get access to their
money and in the process encountered the plethora of heterogeneous actors ANT
predicts. We have used the language of ANT to watch these actors being translated,
enrolled and caught up in performing the heterogeneous network we recognize as
internet banking with its computers, users and money, within the larger networks of
the town and its Council, of telecommunications providers and banks. In chapter one
we saw that Akrich takes up this idea of performance and emphasizes that these
performances are actually and always a co-constitution. We can watch this way
humans and objects define each other, she says, and indeed make each other.\(^{25}\) She
directs us to question

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\text{... the extent to which the composition of a technical object constrains actants in the way they relate both to the object and to each other ... [and] the extent to which [the human actants, in turn] are able to shape the object, and the various ways in which the object may be used.}\(^{26}\)
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She also suggests that the boundaries which define the inside and outside of technical
objects are consequential on its interactions with its users, a line of demarcation
‘traced between what is assumed by the technical object and the competences of
other actants.’\(^{27}\)

She is suggesting that if an object assumes I can do \(x\) and I can (and I do) then in the
act of doing this I perform the object and become a part of it. If it assumes I can do \(y\)
and I can't (or won't) that excludes me from the object. The boundary lies between

\(^{25}\) Akrich (1992), 'The De-Scription of Technical Objects'.
\(^{26}\) ibid., p206.
\(^{27}\) ibid.
us. These boundaries are negotiated and discovered as objects and people adjust to each other.

Note that the ‘obduracy or plasticity’ of an object is established in these confrontations with its users.28 If the object knows its users well the object will stabilize, prove obdurate.

But if we want to actually see this adjustment taking place, to describe it, she says,... we have to find circumstances in which the inside and the outside of objects are not well matched. We need to find disagreement, negotiation, and the potential for breakdown.29

As noted in chapter one, Akrich predicts that at times like this we may see various outcomes. We may see objects being changed or even dismantled. Or we may see them at work changing their users. She says that not only may new technologies lead to new arrangements of people and things, they may even generate and ‘naturalize’ new forms.30 She challenges our interest in technical objects: We cannot be satisfied with just the designer’s or user’s point of view. We will have to go back and forth between them:

... between the designer’s projected user and the real user, between the world inscribed in the object and the world described by its displacement.31

Akrich and Latour both use the term ‘inscription’ to refer to the messages which designers have ‘inscribed’ into particular objects, the opposite movement to the description which translates that in-scription into a text, saying what that object, as an actor, ‘says’ to enroll other actors.32 As Akrich has been saying, this is not a straightforward process. A negotiation takes place, and mechanisms of adjustment:

These mechanisms of adjustment (or failure to adjust) between the user, as imagined by the designer, and the real user become particularly clear when they work by exclusion, whether or not this exclusion is deliberate.33

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28 ibid., p207.
29 ibid.
30 ibid.
31 ibid., p209, emphasis in original.
Akrich concludes 'that technical objects and people are brought into being by a process of reciprocal definition in which objects are defined by subjects and subjects by objects'.

And the question for me is, did I observe the computer adjusting to Yolngu? Did I observe Yolngu adjusting to computers? I certainly was there at the ‘right time’. A time when introductions were new, when there was ample ‘potential for breakdown’; for mechanisms of interaction and reciprocal adjustment to be laid open.

So what did I see?

I saw Glen and Daisy coming up against the inscription in the assembly of banks and computers which we called ‘internet banking’. This inscription read: You will present as an individual; you will identify yourself by numbers and codes, and you will guard your identity. You will mistrust others. I have said earlier that I saw Glen and Daisy created mendicant in this relationship, but I also saw them utterly determined to learn the script, and persistent, day after day, in their efforts. I saw that while they did not resist the inscription in the computer, they nevertheless subverted it. They found out its weaknesses. They presented as individuals with number names but they acted as a family. As a family they coached each other and shared their information and money. They acknowledged that some people are untrustworthy and thus understood the role of passwords, but went on trusting each other. They also demanded that the banks speak to them, if not in Yolŋu Matha, at least in English.

This negotiation took a month. Day by day the computer in its role as an internet bank and Glen, Daisy and their daughter put each other through the trials by which they came to know each other and made the adjustments which eventually settled into a semi-stable working object, by means of which Glen, Daisy and their family continued to get access to their money in the months that followed.

34 ibid., p222.
These adjustments - enabling this stability - hadn’t all been made by Glen and Daisy. I also had the opportunity to watch the bank-computer alliance as it negotiated this relationship and many others over the months of this research. While the computer steadfastly held to its inscription, You shall present as an individual identified by a code, the banks made more adjustments. Despite their wholesale annexation of computers and computer language (the language of databases and algorithms) in their creation of internet banking, they had had to maintain and even perhaps ‘re-insert’ people into their interactions. The many hours we spent in Ramingining in 2006-2007 talking our way through transactions with bank staff must have been a small fraction of the times these conversations occurred across Australia. This was so for the large National banks as well as the smaller credit unions, specifically targeting Indigenous clients. One of the latter went further, in 2007 introducing pictorial codes for passwords.

In this interaction random sequences of symbols were presented to clients - from which they chose a personal sequence - and while they were invariably classic Balanda symbols for people (nurses, policemen, firemen, etc) and things (tools, office and household objects), they nevertheless held enough significance at this cultural interface for people to respond positively. While I observed that these sequences could be forgotten, I also saw that people enjoyed the process of choosing them. In contrast I recalled when we sat at computer screens, the clock ticking, and struggled to create passwords that conformed to specific formula - no more or less than so many numbers and so many letters. More than once our choices were rejected by the computer!

But what of the computer-parts in these complex alliances? Did they do any adjusting? I never saw them adjust their dependence on databases and algorithms, but I did see them restrained; restrained in their capacity to seduce, to invade other areas of Yolngu life-worlds. While they demanded that Yolngu approach them and declare themselves as individuals, Yolngu responded by acting out the code for an individual and staunchly maintaining, performing and so reinforcing, their connections. Lines of demarcation were drawn beyond which the computer could not reach.
Beyond the scope of this research, the question remains: How will this negotiation proceed? What will be the outcome, in time, of the inscriptions: *Mistrust others? Guard your individual property?* We will revisit this question in chapter eight.

**Taking stock**

So here in Ramingining it is all too easy to use stories to illustrate ANT concepts. But can the elucidation of a Ramingining story using its semiotic tools also do something useful? Although explanation is not a primary aim in ANT studies Law has always addressed this need to be useful. It’s about how we should live, happily, creatively, generously, he says, in *After Method*.35

Olivier de Sardan has argued too, that anthropology should not only study but try to ‘elucidate’ or contribute to action,36 while Verran called it ‘an occasion for telling stories which might generate new possibilities for answering moral questions of how to live.’37

Such questions and issues easily tumble out of the Ramingining stories. For people, they are about access and the lack of it. They are about access to information, new means of communication, learning, control, particularly over one’s own finances .. and hence to the fabric of daily life which modern arrangements have linked to money: to food, clothes and transport, and to the means to maintain ceremonial life. They are also about exposure .. to exploitation, dependence, commitment to new values such as private ownership and personal identities.

Whether the ANT way of following, seeing and telling stories will prove useful in facing these issues, and whether it will raise other issues which may not have been found on other paths, are questions this thesis still needs to address.

Law draws this question of morality into the rubric of ontology. He uses Mol’s term, an ‘ontological politics’.

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36 Olivier de Sardan (2005), *Anthropology and Development*, p35.
37 Verran (1999), 'Staying true to the laughter in Nigerian classrooms', abstract.
To describe the real is always an ethically charged act. But, and this is the crucial point, the two are only partially connected: goods and reals cannot be reduced to each other.\textsuperscript{38}

These material-semiotic visions, he says, are specific – there are no general solutions. But what these stories have in common is that they are performative, they are not innocent, they assume reality is not destiny, and they have a simultaneous responsibility to the real and the good .. which are not reducible to each other.\textsuperscript{39}

This thesis takes seriously the tenet that reality is not destiny and examines what we did that brought about changes, or didn’t do .. and could have done. Could still do.

The next chapter tells the story of something that I did in Ramingining, persistently, for eleven months. I looked for a place for a public access computer. But of course I was only one among many actors, all co-constituting each other, as Akrich has taught.

\textsuperscript{38} Law (2008a), 'ANT and Material Semiotics', p155.  
\textsuperscript{39} ibid.
Chapter 4 - Following the actors: A place for a public computer

...if we want to know certain kinds of (supposedly ‘messy’) realities well, then it is useful to rethink method in quite radical ways. ...we need to think more carefully about the nature of the objects in the world – about what counts as an object.

Law and Singleton 2005, p334

This chapter will document the search for a place for public computer access (which would mean access for Yolngu) in Ramingining, between July 2006 and November 2007. Leaving for now the story of the iNet café (until chapters six and seven) it will tell how that search became aligned for a time with a search for a place for a Knowledge Centre, as described and funded by the Northern Territory Library and Information Services (NTLIS). It will follow actors trying to enroll others, and some of these others resisting that enrollment. And it will tell this story by first paying attention to the idea of place and also to the idea of an object. Law and Singleton have suggested here that encountering certain types of objects - particularly the ones that we might want to call a ‘mess’ - might require some rethinking of what we mean by an object. What counts as an object?

As this chapter will soon tell, messes – collections of things which didn’t hang together and which kept shifting around, but which somehow kept relating to each other in messy ways - were integral to this story, and so I am encouraged by the hint in Law’s question that there are useful ways to encounter objects which seem to defy any attempts to tidy them up. More importantly I want to know, can that way of encountering objects, and accounting for them, make a difference to how we behave in relation to them?

Thinking about and doing place

But first, there is something to say about the notion of place. This story is taking place in a Yolngu town and so I am interested in this comment from Verran and Christie. They say that in Aboriginal ontologies, place is pre-eminent.
In those metaphysics, all meaning flows from place so that the knowledge practices involved in doing the collective knowing of place in Aboriginal life is of a different order than for other sorts of Australian places.¹

They are talking about using digital technologies in ‘doing’ Indigenous places in Australia, and they say they are using an image of one of their co-researchers as emblematic. They describe the image this way:

Mängay [is] telling a story of a place named Djilpin while standing in that place and speaking to a video camera. He points to an image of his father’s father, Minyipirriwuy, who is wearing ancestral sacred objects that guarantee his grandfather’s authority to speak and, in turn, legitimates Mängay’s speaking. The photograph Mängay is holding was taken in the 1930s by anthropologist Donald Thompson.²

Here is someone standing at a particular site, evoking objects (some old and some new) to perform a relationship with that place. In chapter one I have already quoted Christie telling some more ways that place is ‘done’ in places like Ramingining, where knowledge (including knowledge about place) is ‘eco-logical’. It is only logical in relation to place. ‘It should be understood more as something that you do than as something that you have, knowing how rather than knowing that.’³

And here is yet another way of doing place. Yasmine Musharbash describes the process of (what she calls) ‘hithering and thithering’ which takes place before a hunting trip, in this case from Yuendumu in remote central Australia. It is a lengthy process of crisscrossing the town, collecting people, tools, information, food, and dropping off other people, before actually setting out. Initially a frustrating experience to Musharbash, she came to understand that ‘h&t’ is exactly about connecting people and places. And she says, it is ‘not just the paths and their connecting feature that are significant, but what actually takes place at each stop’: The exchange of essential information, the negotiation of decisions about the destination, who is going, when they will be back, and where other people are going that day. ‘[W]ithin the one hour or so that ‘h&t’ usually takes, both the people in the car as well as most people in camps at Yuendumu will be updated on anything that there is to know.’⁴

² ibid., p217.
³ Christie (2006), 'Transdisciplinary Research and Aboriginal Knowledge ', p79.
These brief accounts of practices of doing place, that Christie and Verran contrasted with ‘other sorts of Australian place’ are here in this text initially for that very reason, that is to make a contrast; to contrast them with some of those ‘other Australian place’ practices which were at the heart of the search for a place for the Knowledge Centre in Ramingining. It is important to keep alert throughout the coming story, that it was taking place in a place where place was different! That is, where ‘place’ had many meanings.

Here are some more researchers talking about place from a very different perspective, one much more familiar to ‘other sorts of Australian places’. Paul Dourish is here contrasting the idea of space and place, in the context of designing human-computer interactions:

So while "space" refers to the physical organization of the environment, "place" refers to the way that social understandings convey an appropriate behavioural framing for an environment. It's not for nothing that we use the term "out of place," but not "out of space"; the idea of "place" often plays a much more central role in determining behaviour.\

He says, with Harrison, we are located in ‘space’, but we act in ‘place’. He locates this placeness in activities, in 'practice' (the knowledge shared by a particular set of people) and a 'community of practice' itself.

He points too, to others who have tried to capture something of this 'specialness' about place, as opposed to space, in new names, like ‘locale’, and draw on concepts such as 'mutuality' - the interplay of presence and awareness, the two basic requirements for interaction to happen in a locale:

First, the potential interactants need some form of representation or way of making themselves (or being made) present in the locale. Secondly, the potential interactants need some way of being aware of the other's presence.

The people in Yuendumu had this process down to a fine art. But back in Ramingining a great deal of a very different kind of ‘h&t’ was happening in the name of trying to create a place, a locale - a Knowledge Centre - where interactants

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5 Dourish (2001), *Where the action is*, p89-90.
7 Dourish (2001), *Where the action is*, p90-91.
8 ibid., p92. He is referring to work by Giddens (1984) and Fitzpatrick (1998).
(and not just human ones) might be very aware of each other’s presence in meaningful ways. When it comes to reflecting on what actually happened, these insights might help. I will come back to them. And to these:

In 1995 Margaret Ayre worked with the Yolngu landowners and Dhimurru rangers at a place called Nanydjaka (in English, Cape Arnhem) in NE Arnhem Land. Together they were involved in the business of contemporary land and sea management, and in the development of a plan of management for this place. But as Ayre, the Balanda, took part in the various practices this involved, she too grappled with this notion of place. She and the rangers participated in the typical Balanda activities of collecting data (on soils, land forms, plants and animals) and creating objects (tables, charts, statistics) which could be taken away from this place to represent it, in other places where people were making the sorts of declarations (‘this place has natural or cultural significance and so is worthy of protection’) which opened doors to things like funding. She called these practices (translation devices) naming-tracing.10

But she also took part in the work of the landowners and rangers, as they related to the work of managing land, always involving going to/through/on Nanydjaka and the telling of the stories of this place. She came to call these practices (translation devices again) journeying-naming.11

When she finally came to work on creating the management document (which she had been employed to do), she struggles to bring the experiences she has called naming-tracing and journeying-naming together in some way which she knows will achieve the aim of getting the support which is needed from funding organizations, but will not betray Yolngu ontology as she has become aware of it. She comes to see that the object they are managing is a boundary object.12 She calls it ‘Nanydjaka/Cape Arnhem’ and she says what this boundary object made possible:

The idea of ‘Nanydjaka/Cape Arnhem’ we each used to translate our understandings and upon which we accordingly would act, allowed us to go on together at Dhimurru, producing useful work.13

11 ibid., p78.
12 ibid., p 95, she is referring to the work of Star and Griesemer (1989), ‘Institutional Ecology, 'Translations' and Boundary Objects'.
However, just as it was important that this boundary object ‘allowed the work to go on’, this framing didn’t conjur up the idea of a place which somehow sat awkwardly on the boundaries of Aboriginal and non-Aboriginal jurisdictions, meaning something different to Balanda and Yolngu and only connected by overlapping in space, and an agreement to think about and act towards the place differently. That is, she hasn’t resorted to epistemology to resolve her dilemma here. She has grappled with the ontologies which were meeting in this place and saw that the object was multiple, that is, rich in its potentiality and manifestations. She shows that the collage of work practices she and Yolngu subsequently engaged in then re-performed this complex object as any number of singular objects: a sacred site, a place of tourism and recreation, a survey area, a cultural landscape, and more.\textsuperscript{14} But note that in doing this she is toying with the same question Law and Singleton have asked at the beginning of this chapter, about what counts as an object. She has engaged with multiple practices for doing place and found an interesting object. And now she asks and answers this question:

Why confuse things by telling such a complex story? [To show] that work is needed to keep the multiple performances together ... What we know as ‘Nanydjaka/Cape Arnhem’ is diffuse and distracted and unstable and contingent, and it needs active work to remain as the object of management.\textsuperscript{15}

And of course, not to be overtaken by the techno-scientific story. And so, in grappling with issues of place and what it means to be an object, Ayre has come to ontological politics and the moral question, of how it is that we go on. But I want to go back one step.

What counts as an object?

I said at the outset to this chapter that two ideas would underpin its story and Ayre has shown how talking about one leads to the other. I have talked about place, and touched briefly on some of the multiple ways it is done, whether through Aboriginal practices or western discourses. It was not my intention to explore this concept in depth but merely to make conscious its potential for ‘splitting’ when you encounter it. I do however want to explore the other concept in depth. I want to follow a discourse which has become well known in ANT because it is at the heart of the

\textsuperscript{14} ibid., chapter six, p108.

\textsuperscript{15} ibid., p124.
work which became known as ‘After ANT’. It is ANT’s answer to the question, What counts as an object? We have visited it briefly in chapter one.

A group of people addressed themselves to this question in the decade and a half following the self-reflective criticisms of the early 90s which had evoked it. In 2002 Law gave a summary of the ‘story so far’. He says that early ANT had a ‘specific and distinctive answer’ to the question, What is an object?\(^{16}\) It proposed that ‘objects are an effect of stable arrays or networks of relations’, suggesting that as long as these relations do not change, the object will endure. Note that proviso, as long as these relations do not change. He uses topology to talk about two different ways that relations can stay the same. They may stay the same in Euclidian terms, in which case the objects which emerge will be familiar to us. They might be ships or dogs or buildings or the outlines of states. But the relations may also be stable in a different way. He uses his classic study of Portuguese navigation to show how network relations (between the ships, the crews, the ports, the tides, the stars, the merchants) all had to remain stable to maintain the ship, in its ‘shipness’. Latour called what was happening here an example of an immutable mobile.\(^{17}\) The ship held its shape as one stable Euclidian array, but moved through another, a network of relations, which also had to hold its ‘network shape’ (its ‘syntax of relations’) or else the ship may well become something very different, a heap of bits on a rocky shore perhaps. In was in this context that Law developed the notion of the heterogeneous engineer, the builder of such networks, and he showed how we may roam these networks and focus on a particular actor and see it engaged in enrolling other actors (in an act of heterogeneous engineering) or being enrolled.

Law calls this the classic version of ANT and then says:

Less classic is the idea that when objects are constituted then this means that spatial relations are also being enacted at the same time.\(^{18}\)

He uses topology to explain this: Think of another way to deform an object without breaking it and you have defined another kind of spatiality. You can’t transform a 2D annulus, for example, into two rings side by side, without invoking 3D space.

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You can’t move a ship around - without shipwreck - without invoking the network spatiality of shipping.\textsuperscript{19}

A number of ANT studies now began to explore, carefully, a range of objects with a shared characteristic: they did not conform to a network description in either of the senses just described. (Were they objects at all? Weren’t they perhaps just examples of messy collections of numerous objects; manifestations of poor management practices?) These authors suggested that what they were dealing with required new ways to think about spatiality. They were dealing, perhaps, with new kinds of objects; \textit{objects where relations didn’t necessarily remain stable}. They invoked the metaphors of water and fire. ANT may be careful but it has never been shy!

The earliest of these studies, by Mol and Law, looked at the phenomenon of anemia as it was treated in tropical Africa and in a Dutch hospital. Faced with evidence for moving boundaries and most importantly (and potentially maddeningly) moving relations between parts, they refused to say, ‘This is not one object’, or ‘This is just a mess!’ They drew on the properties of fluids to say that ‘entities may be similar and dissimilar at different locations in fluid space … they may transform themselves without creating difference.’\textsuperscript{20} It enabled them to stay with the object.

These same metaphors were invoked when de Laet and Mol studied the Zimbabwe Bush Pump and subsequently fell in love with it. They encountered a pump whose definition, boundaries, parts and even its relationship with its designer were not stable. And they saw of course that this was why it endured.\textsuperscript{21}

Rather than encountering the Bush Pump as ‘a small technological artifact … surrounded by large social environments’, buffeted and resisting, they perceived of it as a fluid object.\textsuperscript{22} And significantly (for me in Ramingining) they had this to say:

\textit{Therefore we mobilise the metaphor of the fluid here to talk of the Bush Pump. In doing so we hope to contribute to an understanding of technology that may be of help in other contexts where artefacts and procedures are being developed for intractable settings which urgently need workable tools. Because in travelling to ‘unpredictable’ places, an object that}

\textsuperscript{19} ibid.
\textsuperscript{20} Mol and Law (1994), 'Regions, Networks and Fluids', abstract.
\textsuperscript{21} de Laet and Mol (2000), 'The Zimbabwe Bush Pump'.
\textsuperscript{22} ibid., p252.
isn't too rigorously bounded, that doesn't impose itself but tries to serve, that is adaptable, flexible and responsive - in short, a fluid object - may well prove to be stronger than one which is firm.\textsuperscript{23}

In my own ‘intractable setting’, hunting for urgently needed workable tools, I took these words to heart. Adaptability and flexibility were not new or surprising concepts of course, but the metaphor of the fluid which can flow around barriers and still endure was somehow more powerful, more encouraging, than exhortations to try to be adaptable or more flexible. I will come back to this.

This process of conceiving of objects and spatiality in ways that may prove helpful in intractable settings didn’t stop here. Mol took the same questions to her study of atherosclerosis in a Dutch hospital and Law and Singleton to their work on alcoholic liver disease in a hospital in the UK.\textsuperscript{24} In these settings - unlike the Zimbabwe villages where the flexibility of the pump was an advantage - the shape-changing nature of the entities they were studying did not come across as advantages. Law and Singleton even questioned their methods (Were they just being sloppy?) and the management of the hospital (Were they just being sloppy?). But in the end they refused to stay with these technological and managerial explanations for the complexity they were up against. They tried out epistemological explanations, and said, yes, it is true that contradictory stories emerge when we take different perspectives to tell them, but they took their arguments one step further. They said maybe what is at stake here is ontology, again. Just as the shape changing capacities of anemias and bush pumps had made them rethink the kind of object they were dealing with, so the multiplicities and discontinuities of these new objects made them reach for new metaphors, new ideas about what counts as an object. Mol said, objects are not necessarily singular.\textsuperscript{25} Marg Ayre took this up and said, yes, look at Nanydjaka/Cape Arnhem.\textsuperscript{26} But Law and Singleton went further and said, objects are not necessarily continuous. Maybe some are like fire, and may dance and jump (even perhaps dangerously) ‘between locations that are other to (but linked with) each other’.\textsuperscript{27}

\textsuperscript{23} ibid., p226.
\textsuperscript{24} Mol (1998), 'Missing Links, Making Links'; Law and Singleton (2005), 'Object Lessons'.
\textsuperscript{25} Mol (2002), \textit{The Body Multiple}.
\textsuperscript{26} Ayre (2002), 'Yolngu Places and People', pp125,135.
\textsuperscript{27} Law and Singleton (2005), 'Object Lessons', p347.
Law and Singleton said this because when they tried to locate the alcoholic liver disease which was at the heart of the study they had undertaken in a UK hospital, they soon found that they were dealing with something that looked very much like a mess on the one hand and a moving, shape-shifting target on another. Yes, textbooks could pin down various stable aspects of the phenomenon and sometimes these stable elements could be found in patients and the hospital, but not always. There was no such thing as a typical trajectory by which patients negotiated the hospital. One story didn’t map onto another. Why, when they were supposed to be studying ALD did they end up talking about something else? Having explored the possibility that they hadn’t approached this problem systematically enough, they began to say that maybe they were dealing with something that was fuzzy, that did change its shape, that didn’t have a single form. ‘Perhaps [this too] was a fluid object, or even one that was ephemeral in any given form, flipping from one configuration to another, dancing like a flame.’ 28

And if we ask Ayre’s question, Why confuse things by telling such a complex story? Law suggests that if we don’t, we will tell simple stories. 30 We will tidy away the complexity, the contradictions, the multiplicities and perform only one of the singularities into which a particular reality can be collapsed. What might we miss?

But he is also suggesting (as are all of the writers here) that if we do opt for this encounter, we will need new methods and allies, and chief amongst these will be the agency of allegory. 31 As he has argued elsewhere, this is not an apolitical or amoral move. He says we are dealing here with method, politics, ethics and inspiration. 32 If a potentially messy, complex encounter is presented as a tidy singularity, whose experience got silenced?

28 Law (2007a), 'Making a Mess with Method', p598-599. See also Law and Singleton (2003), 'Allegory and Its Others'.
29 The term is from Cussins (1998), 'Ontological Choreography: Agency for Women Patients in an Infertility Clinic'.
30 Law (2007a), 'Making a Mess with Method'.
31 ibid., p603.
32 ibid., p604-605.
These trains of thought were seductive. They were seductive precisely because they were new to me. As I have already said one way in chapter one, I was working in a place (engaged in working with people to find new ways to do things, new ways, for example, to do banking, communicate, record stories and images) which was characterized by past failures, riddled with accusations and stories about things that hadn’t worked, and I was convinced that just trying to do the same things harder wasn’t an option. Whenever someone said something which implied an alternative way to operate and think about operating, I wanted to listen. And it wasn’t just the hope of finding new ways to operate which was at work here. These stories were offering to legitimize discontinuities, times when things stopped, didn’t work, or even fell apart. When I began this research project I had already been living in Ramingining for four and half years. I knew that in small remote towns on the borders between two vast life-worlds, things often stopped, didn’t work or fell apart. I was being offered here a way to stay with such events, and to interpret them in ways which might prove productive. So let’s hear what happened.

Two stories

Two accounts follow. The first is of my first two days working in the Women’s Centre, five days after returning to Ramingining. Although there have been working computers in the Women’s Centre in the past, at the start of this story they are both disabled. Because the old library has now been closed for over a year, they also represent the only computers potentially available for public use. The story tells how we reinvigorated these computers and describes the kind of work and the kinds of interactions which continued to happen while the search for an alternative place for Yolngu access went on. Although it takes place before the story of Glen and Daisy in chapter three, it takes up the work of that chapter, in watching the computer at work in Ramingining, watching it engineering its heterogeneous networks, and enrolling others in this work, including the search for a place. It provides a backdrop for the second story which cannot move at this slow pace.

The second story also begins in the Women’s Centre, as it settles into a period of active engagement with computer use, but it then follows the search for a place for a Yolngu access computer outside of the Women’s Centre. Although it speeds up and tells what happened month by month, it won’t seem like the short version! There is no short way to account for the work that it took - that it takes – when fragile
networks are being engineered and held in place, when as many actors resist their scripts as are enrolled by them. And according to Latour, this is exactly the right time to look.33

Story 1: Starting out

22 June 2006: I have arranged to meet Wamuttjan, the Co-ordinator of the Women’s Centre around ‘nine to ten’ today. We had both laughed at this, knowing what it meant – maybe 9.00, maybe 10.00. I love these moments when the edges of our worlds and the work we do there to keep them together, suddenly become visible .. and we are both aware of it, and laugh.

I set out just after 10.00 and call at the Council on the way. Jo, the book-keeper, and a new CEO are there. I say I am on my way to set up the computer at the Women’s Centre and explain to the CEO that I’m here to support whatever is happening with computers .. and if something isn't happening, to try and get it going. He seems interested but I do know that my role as researcher and intervener seems valuable to some and useless to others, and no-one much cares if it doesn’t mean trouble for them. He tells me about someone from Maningrida who’s interested in setting up a computer-based training unit in Ramingining. A bit later this person walks in and recognizes me. What a small pool we are, we Balandas working with Aboriginal people! (And how endless this talk will seem in the months to come; sustaining networks of busy people - often in the absence of Yolngu and the very projects they talk about!)

When I approach the Women’s Centre, I find Wamuttjan still at her home nearby, standing with others and waiting for a signal. It's the sound of clapsticks and singing that will signal the formal announcement of a death. Yet another death. She has a few minutes so we walk over to the Women’s Centre and she shows me the computer for her office, waiting to be unpacked. It has just returned from Darwin. She wants me to go ahead and reinsert it into its place on her desk.

I’m greeted by an alarming tangle of leads and a bewildering collection of peripherals: monitor, keyboard, printer, radio-mouse, server, mouse transmitter, adapters. I don’t even recognize them all and yet they are the reason I’m here: this heterogeneity ANT is always on about, this entanglement. If it was all connected and working, its network nature (especially its diversity) would be invisible and I wouldn’t be here. And I have to submit to it. Only when I allow each of the leads to lead me along its twisted path and I compare the relationships between the bits with those at the other computer - and later ask Wamuttjan for help - do

they untangle, both literally and in my mind. They make me useful. And I get to watch them and Wamuttjan performing her role as coordinator.

I ask Wamuttjan for a cloth to dust. I start to say, ‘dust is the enemy of computers’ but she laughs and finishes it for me, getting some new wipes and tackling the other computer herself. Together we tacitly acknowledge dust as another actor in the emerging actor-network of computers here in Ramingining. I recognise it as an actor because (as Law says), it exerts an undeniable influence on others.34 It can dismantle a computer connection. Just now it has produced a cloth, and a laughing acknowledgement of the Balanda obsession with cleanliness and durability.

We complete the jigsaw: leads connected, dust distanced, camera plugged in, switch turned on, password presented (the password I had collected in a moment of forethought from David, the IT support person, when I had tracked him down in Darwin). The computer leaps into life, evoking that shock of relieved surprise. Immediately we forget about the work it has just taken to pull it together, and the work going on elsewhere which today (unlike so many other days) hadn’t been interrupted. We forget how complex and disparate are the actors now black-boxed to make it seem like a unit. An unruly collection of Latour’s mediators have collapsed into (have been enrolled in) an intermediary. Of course, if we couldn’t do this, it would be impossibly hard to go on.

The camera intrigues us for a while and then we go to each of the internet banking sites for the banks and credit unions which are commonly used here, and I show Wamuttjan how to set them as favourites. We slip effortlessly into a new set of enrolments and translations and curiously, it sends us to different places; inscribing the computer network as an economic technology and ourselves as different types of economic being. The translation of all those bits and pieces into the black box of the computer has allowed Wamuttjan to connect into her own economic life with all its promises and problems – money, sharing, transferring, helping, concealing. With her computer restored and the internet working and with this new trick of setting favourites for banking sites, what might she be able to do? My head goes elsewhere. What exactly is happening here? How do I understand this set of events that has just happened? The computer has participated in building a network of actors of quite astonishing diversity, of all types and sizes, human and nonhuman. But what is gained by resisting both technical determinism and social constructivism? Perhaps it keeps me here, right in the network.

A young mother from Wamuttjan’s family comes in and we show off our new competence with the camera software, and in the process we find the computer isn’t talking to the printer. Aha! This network building is always provisional, always more or less temporary. When I

call in at the council to update Jo, she says I may need to download the software for the printer. I laugh. I know how to do that now. Ten days ago I didn’t. So this network building is also to do with assembling bits in our experiences and memories.

We now have a working computer in Wamuttjan’s office, but the second computer, the one set up for public access in the common area of the Women’s Centre, isn’t working. There is talk that it needs a new power board. Meanwhile I go over to the school and one of my waku (my ‘adopted’ daughters), sees me and asks if I do MP3 computer stuff. I say, I’m learning, and she replies, I want to learn with you. I invite her to come later to the house where I’m staying and have the Tablet computer I have brought with me from the university. I am still at the school when Wamuttjan finds me, with that ‘at last’ demeanour, wanting to know the password for the returned computer. I feel ashamed that I forgot to leave it with her. Little do I realise in this exchange, what a huge role passwords will yet come to play in this story. When I later call by the Women’s Centre she is doing internet banking with another woman.

When my waku comes to the house to pursue her MP3 music she brings a young bämara and her baby son. She is great, keeping baby and water away from the computer, but he gets very restless. We find we can’t get her MP3 player to communicate with the Tablet as it has no CD reader. Her friend gets bored. We will go to the Women’s Centre tomorrow.

But the Tablet and our one working computer at the Women’s Centre have done much in a day. We have been linked into other heterogeneous networks, other life-worlds: internet banking, internet music. We have been sent out, across the town, enrolled, as we in turn enrolled others, to keep the networks in place. We humans have negotiated these enrolments in our own ways: I’m learning. I want to learn with you. Each computer has been less accommodating. It has waited at each juncture for us to comply with its demands. Its alliance with the banks, with money and music have acted seductively. They have kept us in the network. They have conjured up their reputation as very delicate networks to enrol us humans in the task of resisting encounters with babies and water. We have seen too, that sometimes this seductiveness just fails .. and boredom allows a link to break.

23 June: My waku calls for me, accompanied by several bämara. En route to the Women’s Centre we pass the old library building where a council meeting is just finishing on the veranda. Jo beckons me over and Bulany, the Council Chairman, sees me and shakes my hand. I’ve gone through a long process of writing and talking about this project, so I just say: I’m back! Wämut, the Vice-Chairman asks me when I’m starting. I tell him, I’m ready for humbug. I can tell he’s pleased to see me and I suspect that he doesn’t care too much

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35 Humbug is a local term for a request for anything, something, money, food, fuel, the use of a phone, a lift in a car, etc. Although inherently a negative term it has evolved to also carry a friendly, inoffensive, even endearing, connotation.
about my research. He's just happy that he knows he can trust me, and that I'm there to help and not to make trouble. Well, not for him anyway. Dilemmas about the relationship between intervention and observation will be my problems.

_Wamuttjan, Bulany, Wämut, my waku and her bāmaras, and Jo and I all walk over to the Women’s Centre where Wamuttjan indicates that it is OK for us to use her computer. I turn it on and open the camera program so we can experiment with it. We have fun taking the pictures which miraculously appear on the screen in front of us. Our faces and their communion with heat and dust distract us from the serious business of doing money._

_Wämut_ indicates he wants to do internet banking so I open the internet site. When the login screen comes up he asks about the client number. He thought it was his account number. Next the screen asks for a password so I say a few things about the need to keep passwords private: that it's OK to ask people to look away. I then realize he doesn't yet have a password; doesn't have internet banking set up. Someone asks about the time it takes to transfer money and Wamuttjan explains: It takes several days for money to move between accounts in different banks but between accounts in the same bank, it is instant. I realize that some of these people are just starting to explore internet banking. We are all at the beginning of something here.

We move away from that computer and my _waku_ starts doing her banking.

The men leave and Wamuttjan, Jo and I turn our attention to the other set-up, the desk-top in the main room. Jo explains that the one in Wamuttjan’s office was not supposed to be for public access; that in the past it has caused a lot of problems, with her time being wasted and her files going missing (.. implying that allowing public access inhibits this particular computer’s ability to inscribe Yolngu accountability to Balanda funding?) But the public access computer has a history of problems and it is still not working.

Wamuttjan goes to the power box on the wall, indicating that it might be the problem. We find one switch is ‘off’ and decide to try it - with a sense of adventure. The computer and printer come to life but the monitor screen is blank .. till Jo induces it to engage in a conversation in a language Wamuttjan and I don’t understand. I imagine that one careless response will wreck everything but Jo obviously knows better. She has links to a part of the network which is out of our reach. Meanwhile my _waku_ who has been trying to do her internet banking tells us she is leaving. Her client number and password haven’t worked even though she was sure they were right. (Another hint, if I had been prescient, of the time we are going to spend in the months ahead, grappling with these obligatory passage points.)
We call David, our IT consultant, about the recalcitrant PC and we reach him in Kununurra, Western Australia. He and Jo start a conversation, again in a language Wamuttjan and I don’t speak. The phone doesn’t reach to the computer so I stand in the middle of the room holding it so Jo can be within reading distance of the screen. We get cut off but Jo has something to go on and as it is going to take time, I slip away to fetch the Tablet. I am thinking we could at least plug that into a phone line and use it for public access if all fails on the PC. There is no phone-out line in the main room, but I have a phone extension which would plug into the fax line in Wamuttjan’s office and go under the door. When I get back she and Jo aren’t there so I plug in the Tablet. It fails to authenticate the login name and password! They come back and tell me good news: the PC is working.

A: So what was the problem? J: Geckos!

She has taken off the back of the PC and cleaned some of the ports. There was a pile of gecko poo. She turned it up and shook it and now it works!

Back at the house where I am staying, my mentor and friend, Yambal Durrurrrnga, has come to catch up. While the kettle is boiling I get out the Tablet and show him the Journal program which enables you to write on the screen as though with a pencil. I use a bold pen and write, Hello Yambal! He takes it saying, May I have a go? He takes a moment to master the pen, but then writes, I’m a black man. We exchange delighted smiles.

The computer has us in thrall. We are thoroughly enrolled in this business of holding a network in place, the totally heterogeneous network by means of which the computer exists. We humans, as users or technicians, the phone lines, the power and data leads, the dust, water, babies, and gecko poo .. we all have to be at the right distance: close or distant, present and absent. We will even stand in the middle of a room holding a fax machine which is acting as a phone line in order to keep this network in place. The bank (and music stores) have ensured their influence by mobilising the possibility of banking (and shopping) all the way from who-knows-where to here, and by enticing us into a complex array of socio-technical arrangements to meet their requirements.

When it is in place, when the network recedes and the computer appears innocently as a single actor, (one of Latour’s intermediaries), then we humans revert to some of our own unique characteristics, our concerns with money, our desire for music, our
humour, our challenges to the computer, our research. *I’m a black man,* says Yambal with a knowing smile. *What are you going to do about that!*

Most of this story takes place in a ‘place’, in the sense Dourish has described. It was very much a space inhabited by and given meaning in a community of practice. But it was also place in the sense alluded to by Christie and Verran. In that place *Wamuttjan* and her sisters, who formed the bulk of her team of women workers, were my *waku* (my classificatory ‘daughters’). Every person who came knew how they were related to these women. When *Wämut* came over he wasn’t just a man stepping into women’s space; he came as their brother. He and *Bulany* knew exactly what that meant and how they should behave. Everyone in the town knew and this was sometimes a problem; different families feeling more or less welcome or entitled than others. The Women’s Centre didn’t always operate according to what Dourish has called the ‘social understandings’ of the Balandas who worked at the Council .. and in the funding organizations.

Jo and I came into this place and we tinkered with it. Computers came and went. Satellite signals arrived or didn’t. Nothing tinkered with the underlying place-ness. But in the town there was no such place (in either sense) known as a Knowledge Centre or even a public internet access place. I had just started looking for a space where I might create one (in at least one of these senses). As the next story will tell the two places variously merged and split as I looked for them. I won’t preempt any conclusion as to whether I did in the end find or create such a place, but I will warn my reader again that I have taken Law’s call for slow methods seriously. At least the reader doesn’t have to take the search day by day, as we did, but can leap from month to month, slowly.

**Story 2: The search for a place for Yolngu access to computers**

2.1 *The Women’s Centre takes up its role as a place for computer access, for some*

The computers in the Women’s Centre were now frantically busy or neglected, by turns .. the complex extended networks holding them in place remaining invisible, for a time. On days when TCU, the Credit Union, was shut and people needed to move money to other accounts in order to access it, both the public access computer and *Wamuttjan’s* computer were busy
printing forms for faxing requests for these transfers and giving access to internet banking .. or not, as passwords worked or failed, or as people who had heard about internet banking and wanted to use it worked their way through the processes of coming to terms with it. The tragic death of a child in a crocodile attack brought relatives to the town and away from their usual banks, their routines and their own access cards. The life of the Women’s Centre revolved around the computers on these days.

On other days, when other channels of access to money were working, the computers slipped into other roles. They were the quiet facilitators of lazy card games. They transferred music from discs to MP3 players. They linked people to shopping malls. But as chapter five will show, the Women’s Centre still wasn’t really a public access place. There were other actors at work. Not everyone felt able to come. And some who had come, had done so because some urgency, a child’s death, say, or even the desire to get some music onto a new MP3 player, had taken them past their usual boundaries. Men had come, but they had brought bəmaras with them. They hadn’t come alone.

Still, it was a place, with an open door on most days. It did have computers, with access to the internet, and accounts with established links to the Council bookkeeping process and funding alliances. It had a name people understood, a ‘Women’s Centre’. It had multiple placeness in Yolngu and Balanda terms.

2.2 Talk
Throughout June and early July I continued to spend several hours in the Women’s Centre most days, but as I moved around the town, visited offices or met people out walking on the roads, I talked about computers. The computer may have found a relatively stable home in the Women’s Centre, with its strong links to both Yolngu families and Balanda understandings of the way funding is distributed to communities, but it wasn’t a fully accessible site. I was looking for a place for another public access computer, a place where more people might come. I talked with Yolngu and Balandas .. with Jo, CEOs, staff at the school and the Resource Centre. Sometimes we spoke as though it was just an access point, other times we called it an ‘iNet café’ or the ‘Knowledge Centre’. All these imaginaries36 were at work. While the idea of an internet café conjured up notions of informality and a blending of computer access with other Balanda ideas about shared public rituals (like drinking coffee), a Knowledge Centre drew on other possibilities. It was the current name for libraries in the remote Northern Territory funded by NTLIS. As already told, Ramingining used to have a library, a Knowledge Centre. There was even a building, which had housed adult education one end and a well equipped library at the other. In August 2003 new computers had been installed. In 2004 the then CEO had closed it down pending

a proposed move there by the Council. But it remained closed except for some use by the clinic as a second-hand clothes shop. Balandas held the keys to it.

In our conversations we thought about this place. Perhaps I should share the adult education room.\footnote{Batchelor Institute, one of the main providers of adult education in the NT, had been working through the school since the closure of the building.} I tell the Council CEO I want to move back into the library end and need a phone line there, but he, in turn, suggests I work in the Women’s Centre. I plug the Tablet into the bookkeepers phone-line in the Council office - grappling with a heavy desk and an inaccessible socket - for Bulany, the Council Chairman. He is anxious to start learning about the internet. But it is a very temporary arrangement.

Meanwhile the CEO at the Resource Centre tells me he has heard about my project; that I have a satellite equipped vehicle! I tell him sadly, No! Instead we talk about possibilities.

At the school the multi-media teacher and I fantasize about using the school computer lab as an iNet café run by future multi-media graduates. The principal tells me she is interested in me doing some financial literacy teaching. So even this (Baland) goal of integrating school leavers into the cultural and economic life of the community plays its part, drawing in actors to participate in the clotting of this thing, a place for access to computers by everyone in the town.

And so the talk goes on. It’s like the jetsam which blows into the grass around the Council building. Here there is even more talk … about potential funding. NTLIS wants us to find a site so we can again access their funding. They have funds for a Knowledge Centre, but will only make it available if there is a guaranteed site, and a formal agreement. There is the potential work with Maningrida JETS.\footnote{JETS = Job Education and Training Scheme} They have ‘rumors’ about money. There are calls for submissions to a new Government initiative to support IT in remote parts of Australia. It is the Backing Indigenous Ability program (BIA). I am planning to put in a submission.

I collect information bites about the plans for a new Council building. ‘A proposed $1.2M from the federal government.’ ‘The Council has to come up with $125K.’ ‘ICC is a black hole for current negotiations.’\footnote{ICCs = Indigenous Coordination Centres, the bodies which replaced ATSIC as an Indigenous voice in Government. See https://www.indigenous.gov.au/} I get the impression that over several years and while a succession of CEOs came and went, the whole project has stalled around indecision as to whether to build a new building or renovate the library building. On 11 July the latest CEO tells me that the adult education room in the old library building is going to be divided to allow Centrelink and TCU to move there from the old Council building. There is no more talk of me
sharing it. I’m also told there is ‘nothing’ in the old library room, no phone line, no equipment.

In most of this talk Yolngu are absent, and so too remain the objects of the talk: the new Council premises, the new public access computers and a place for them. The town is full of buildings and there are over one hundred computers here, so why is it so hard? Where is the public access computer in all this talk? Where is the place?

The computer and its places are in my head. They are in the plans. They are in the talk. There is this network of stuff in our heads and a scattered network of stuff on the ground but the two networks haven’t come together.

The talk (talk, talk) is mainly Balanda but it isn’t happening in sealed rooms. It is seeping out. Yolngu stop me in the road. Are you doing that computer? Can I come and see you? Are you doing internet banking? So the computer is at work. It is looking for a place. It has aligned itself with something already here: with money! I can feel the pressure building.

At the end of July the CEO down at the Resource Centre asks if I am interested in doing computer training there, as part of their CDEP program. He also thinks they can donate some replaced computers to a ‘space in the town’ and to outstations. DEEWR is ‘making the right noises’, he says, about funding for computers for outstations.40 The school Principal too, tells me there may be computers to donate later in the year, when their roll out happens.

I report to my supervisor at the university that we need a computer with a disc drive and a reliable way to connect to the internet and he thinks he knows where to find some money.

On the 1 August, determined not to give up on the old library room, I borrow a key. It doesn’t work. I have been alerted to this. ANT has challenged me to describe failures and successes in the same terms. I didn’t get into the room because the inscription in a key failed. This dissidence, this not reading an inscription, not becoming enrolled, not being able to negotiate an obligatory passage point, belongs in the play. It isn’t off stage.

By now I have started a survey of all the computers in the town and I am over at the clinic to include them in the survey when a nurse there tells me, that in her opinion, it is a waste of time! I have no idea whether she means that the survey is a waste of time or Yolngu access to computers, but there it is again: a break in the chain of connections which holds things together. These breaks are just as performative as the links. This time it is me who gets to be enrolled or to resist. I chose to resist!

40 DEEWR = Dept of Education, Employment and Workplace relations
I have made a PowerPoint presentation on the Tablet computer re my project and the results of the computer survey in the town. I show it to whoever will look: Balandas and Yolngu.

By the 8 August the talk in the Council office is positive again. A refurbished building is back on the agenda and may include a library, iNet café, coffee shop .. but there is no new information re funding from NTLIS. There is continued positive talk at the Resource Centre too; ‘more right noises’ from the relevant Government departments I’m told.

On 22 August I talk with the Council CEO about plans for accessing the NTLIS funding. He reads me some to-and-from correspondence and it is agreed I will contact NTLIS to ask the next step.

By the end of August Jo has gone on leave and her replacement in the Council office tells me that ICC have been there today and the plans for the Council refurbishment are back to ground zero.

On 25th there is a Council meeting and I make my first report about my project. The meeting is in the old library room and I get my first proper look around in there. There are the old computers after all; dusty and disheveled. There are also several computer desks, a TV on a mobile stand, bits and pieces of furniture and equipment. All dusty.

2.3 More heterogeneous engineering

In August I go into Darwin for a week and come back with a second Tablet laptop on loan from the university. Like the first, it is primed to log into an internet account also paid for by the university. But there is still no place with a phone line where it can become a public access computer.

Since the Council meeting in the old library building, the relics of the old public computers and other equipment are no longer hidden. The CEO can no longer say they aren’t there. The locked door can no longer hide them. They say they have been there all along, while the thick layer of dust agrees. But what is holding them in this deserted place? What is keeping the door locked, now that at least one key works? While the huge amount of talk appears to be acting to draw together the need, the ideas, the will, the funding, still doors remain locked. Dust stays in place.

On 8 September I try to get some of the equipment from the old library to use in the Women’s Centre. At least the Women’s Centre building is open and used, if not by all.

The Housing Manager has the working key to the old library. When he opens the door for me he insists I am only to take one monitor. He says that’s all he has permission to let me
take. When I report this to Jo’s replacement, who gave the permission, he suggests the problem lies with the key bearer! I’m puzzled and I fume to myself over this performance of the power keys bestow and on who tends to hold them. 41 This display goes on a bit longer. He offers to get the rest of the equipment for me and brings some of it to the Women’s Centre a few days later. He does this and then says there is yet more. I get to collect it another few days later (enrolling the key-bearer). Meanwhile I work at removing the dust and blow up an old vacuum cleaner in the process. I connect up various pieces of computer to find out what still works, slipping into the role - of the assembler of this bit of the network - of which I have now become so conscious. Is this what Latour means when he says that when things break down the social becomes flat, concierge by concierge? 42 He was in Paris of course so the metaphor needs a wild translation. But I’m not just conscious of this, I’m self-conscious. I am aware that it is me, the Balanda, who is assembling these pieces and fumbling in my role of extending the network to include my Yolngu co-workers. I am relieved when Wamuttjan takes me out to a shed at the Women’s Centre and shows me yet another pile of neatly stacked old monitors and computers. We lug them inside and set about mixing and matching. Two of the computers and two of the monitors are dead. Wamuttjan tells me the story about the one with the bitten off lead. It was a dog. It was quite new at the time. But two working sets of computer-monitor-keyboard emerge out of the jigsaw puzzle. One of them is an antique running an old version of Windows. It is perfect for the old computer games I am able to borrow from the school. The newest looking set (from the library) emerges from its coat of dust, miraculously bursting into life and displaying on its screen the things people were doing when it last closed down, several years ago! Now it gets to say more than just, I have existed all along. It gets to say, I was being used. I have already had a social life in this community. It suggests that it was actually needed. It at least bears traces of its work of bringing people together. It has one song in its music collection and we play it proudly (until we’re sick of it) and someone brings in some CDs.

2.4 Enter a new actor

On 29 August I have had to move to my fourth house, and I know it is temporary. Without a place to live I can’t be part of the search for a place for a computer, so I have started looking for alternatives, including a caravan. I have talked with the Council CEO about contributing money to create a site and he thinks it is feasible. There is a (terrible old) caravan at the back of the Resource Centre and I start asking around about moving and renovating it.

And I start searching the town for a site. My friend Yambal suggests a site close to his property .. but power and water would be a problem. I have to talk with the builder, the plumber, the Power and Water guy, the mechanic (who lives in the donga beside the old van at the back of Resource. Maybe I could leave it there? No.) There is an old van site

41 This will be the story of chapter six.
opposite the school with a large roof over it and an old shed. It would need the power and water restored and permission from the land owners, but they happen to live next door. Each initial enquiry gets an encouraging response and a whole new cast of *dramatis personae* troops on stage.

But by mid-September I am going around in circles. I can’t get a definite quote or commitment for the work it would need to move the old van. A huge tree stands in its path and as it has no wheels it will require large vehicles, man power, expertise and time. Such work entails protocols. I write a letter to the Resource Centre Board about the van and to *Yuyuŋ Nyanaŋ* about the van site. This Aboriginal Corporation, owned by the Traditional Owners (TOs), has taken out a Land Use Agreement over this, and other blocks of their traditionally owned land. I visit the site and the Council Chairman and two TOs from nearby houses come over. *Bulany* reminds me I need to work through the Council. The TOs ask me questions. What if they want to meet here in the wet (as they have been doing for years)? And since I am a Balanda, will I be able to handle the noise (of living near Yolngu)? But the next day one of the TOs tells me it is OK for me to live there. At least now (at last) Yolngu have joined in the talk.

This hunting for a place to live has become aligned with the search for a place for a public computer. It’s as though two ‘independent’ networks have come together and invigorated each other. The Balandas, the locked doors and the dusty computers which have been the main actors on stage to date have made it clear that there is no arrangement of people or things in the town, at this point in time, which is about to give birth to a place for a public access computer. Something has to be introduced. New actors are needed to take the play forward. I can feel the sweat on the back on my neck as I stand in the wings, just off stage, and hear my prompt. In ANT terms, I have to be a heterogeneous engineer here, even as I learn to recognize the computer in its own agency, engineering places in the town for itself. But without somewhere to live I can’t stay. I can’t be part of the act. A place to live has thus become a major actor in the play .. adding to the *hetero* and demanding new levels of the *ingenious*.

On 22 September I visit the old van yet again and lose confidence that it can ever be moved. The huge tree in its path now flaunts a look of permanence. I am amazed at how long the prospect of moving the van has stayed alive; how confident various busy blokes have been that it could be done .. that somebody else could do it! (The agency of optimism and expressions of good will.) But I go to Jo and talk seriously about my willingness to put money towards the van site, and to purchase a satellite dish. (The agency of money.) Three

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43 *Yuyuŋ Nyanaŋ* is associated with *Murwangi Aboriginal Corporation*. Both local organizations are owned by Traditional Land Owners.
days later Yuyuŋ Nyanaŋ send their work team to the site to clean it up. Gosh, I think. It really is going to happen!

One of the CDEP workers sees me at the Council and tells me someone is going to teach about computers opposite the school. That's me! I say. He tells me he will come.

2.5 A place for the computer starts to clot

On 28 September Jo comes to me, upset. Her replacement while she was away has stayed on as an off-sider but now in the midst of a controversy he has quit. Would I consider coming and working in the Council office? Jo says she is happy if the banking work I do at the Women's Centre in the mornings follows me to the Council. A controversy, a resignation, an absence, a need, and thus a possible place for a computer! I agree to come and restrict my tutoring at the Resource Centre to two afternoons a week.

At the Council I start to learn something of how it operates at the centre of the town's civic arrangements, as its various employees - Yolngu and Balanda - come in and out of the tiny cramped office, which opens off a large neglected ‘space’. In other rooms opening off this space are the Centrelink and TCU offices. They are staffed by Yolngu who disappear into these rooms morning and afternoon while long lines of people follow them in (to Centrelink) or pass by the tiny TCU window which you have to stoop to see through. I learn that the Council building, in all its apparent decay, is a space where different places are performed daily. In a small way this is like the scientists and the Yolngu owners whom Ayre observed, producing multiple places at Nanydjaka/Cape Arnhem, three hundred kilometers east of us.

My own hours are spent filing bits of paper, selling fuel and sorting mail .. or rather, grappling with the Council’s unresolved status as ‘post office’ for community mail. But I get to spend time with Bulany, the Chairman, and he starts using the Tablet at a desk in the crowded office to practice his computer skills.

I now hear more about the interactions and stalemates between the Council and funding bodies over the future of the Council building. In one discussion Bulany gets upset at the words ‘revisit’ and ‘stories’. His body language and attempts to start to say something all seem to add up to, There it is, ‘revisit’! Always going over this stuff but no action. Just stories!

Later he and I talk about it. He tells me he has been waiting six years. He wants security, privacy for meetings. We look around the neglected central space in the building. (I find that whenever I refer to this ‘room’ in my fieldnotes I am at a loss for a word and always call it the ‘space’.) It is daunting. And I have started trying to do something about it. With mixed
feelings I have started cleaning it. I talk with Bulany about putting computers there. He worries about this. Will the computers be safe? Neither of us know.

On 4 October I am filing when I find a letter accepting the proposed funding from NTLIS. It is dated 24 July and it has been signed by the Council Chairman. I call NTLIS to tell them, puzzled about the conversations I had with the CEO in August which had implied that all these moves were still unresolved, that the various bits of the network which had to come together to get the funding here in Ramingining, were still scattered. But I can’t ask him about it because he has recently left. We are expecting a new CEO tomorrow. She will be the ninth (permanent or temporary) CEO in the last five years.

She arrives on 5 October like a cross between a whirlwind and a new broom. Jo and I both express our misgivings. But I soon find that she is an enthusiastic and hands-on manager. She is the Amanda in various stories here.

Within a day of arriving she gets the key to the old library and helps me lug the computer desks out, taking one to the Women’s Centre and one to the Council ‘space’. She has ideas about a water fountain and a drinks dispenser. Heavens! We don’t even have a loo! (This because a previous CEO has given up trying to manage the one at the back of our building and had it sealed up.) I bring the restored library PC over from the Women’s Centre and soon kids are playing cards on it. A ‘working space’ starts to come together in the heart of the old crumbling building, with its small cramped offices clinging to its sides. It is just a corner of a room, but it is the one bit of the room that isn’t a thoroughfare. It is just a computer but it is on a proper computer desk which seems to be saying, ‘watch this space’. The computer has no phone line, or even an account, but it has card games and these invite people new to computers, to ‘have a go’. There is room for bāmaras, for a mum to nurse a baby. Small knots of kids collect to play cards after school and one of them, a wag, is soon taking off its one song (making one song do more things). At the end of the first day I pack up the computer and put it all in Jo’s office, but I only do it once. After that I leave it out. It is starting to stake out a claim.

On 9 October I gather together a power board (from home, collected by bike), a power and phone lead (from Wamuttjan’s box of bits at the Women’s Centre), another phone lead from Jo’s, more leads (from home) and try to connect up the Tablet in the ‘space’ to one of Centrelink’s phone outlets, via a window between us, hidden behind a whiteboard. It potentially works but I provoke a small storm. The harassed looking workers, the queues of people waiting in Centrelink, are all very eloquent: We need it! Instead I take the Tablet and plug it into the phone line in Bulany’s office in a small portable building out the back. It links into the internet account funded by the university. It is a temporary solution as we can’t take over Bulany’s office but it enables his family to do some banking. Meanwhile the PC sits
promisingly in its corner back in the ‘space’ but has no internet account. People play cards and one woman types an essay for her Batchelor Institute studies. Then on the 16 October it dies. Despite its limited affordances it had been the obligatory passage point for the clotting of this little bit of the emerging network. Now the network disintegrates and people wander off. The kids find amusement elsewhere. Centrelink doesn’t miss us. Bulany and I turn our attention elsewhere.

2.6 Talk swells up to fill the space

I talk in earnest with Bulany, Amanda and Jo. That ‘other’ network - of Balanda collaborators - re-emerges from the death of our small experiment: the network of wires, spaces, people, and an old computer, which had just started to conjur up the larger network which might be, in time, our Knowledge Centre. During this talk I learn that in the past at least one computer provided for public access has ended up on a Balanda desk.

But while I am focused on finding a site for a public access computer with a phone line and an internet account, Amanda takes up the issue of the Council building. Jo introduces her to the daunting collection of quotes and plans which have accumulated over the years and she makes the decision: We renovate the old library building and move the Council! She includes a library in the mud maps she now sketches out with me (despite all the expensive quotes and plans).

Meanwhile she and I have been exploring the library building. She is enthusiastic that the library should be restored there and move into the adult education end. There is everything we’d need: white boards, old phone connections, a dividing wall for privacy. She holds a Council meeting there on 17 October and asks the Council to approve this, and my proposed use of the caravan site.

The talk goes on, on several fronts: planning the renovations to the building for the Council to move there and the restorations needed (water, phones) for the library to start working there meanwhile. People align themselves: ‘It shouldn’t be hard.’ ‘If it isn’t blocked and there isn’t water on the floor it goes to the bottom of the list.’ ‘I’ve heard it all before.’ ‘I’m still convinced we could have gotten a new building.’

On 21 October I learn I have to move house yet again (I am in my fifth) and so I intensify my search for a place to live. Amanda and I ride round the town to check out other sites. We find nothing beyond the van site. We visit it and the old wreck of a van at Resource. I recognize that I am going to have to buy a van. Amanda thinks Council can match my contribution and agrees that I will have to go to Darwin to look for one.
Amanda decides that since we have to stay in the old Council building until the ‘new’ one is ready, it can warrant some work. A CDEP team works on its devastated façade and another cleans up the rubbish and grass around it. Bulany comments that he is only a little bit happy .. because we aren’t moving.

On 25 October a Balanda visiting the town learns about our problems with the old PC, which had died but gone on sitting in its corner in the Council space. He restores the operating system for us and we have a working computer again, albeit with no internet connection.

Meanwhile Amanda and I go exploring in the old library building and find that the phone lines there are disconnected.

In November I find a list of old email and internet account names, once used by the library and paid for by the Council. They hint at possibilities. Maybe these accounts are still active. When the Tablet tries to connect to them - taking a chance through the window behind the white board, via the Centrelink fax line - they lead nowhere. I contact NTLIS and ask them. They tell me about their involvement with the old library but have no leads on the accounts. So we haven’t moved. We can’t depend on this route to a phone line and the Tablet can only connect to the internet using its account paid by the university.

A spate of old computers now send out messages from the school, from TCU, from Amanda’s office. The very idea of a public computer space has sent this ripple of life through them. They offer themselves to the engineering. Do we want them? Centrelink donates two dusty monitors. I find more lurking in a store cupboard and the latest ones join the row. One donation is exciting. The school donates an iMac to Bulany in recognition of the effort he has been making to develop his computer skills. We set it up in his office and he is ecstatic. But it isn’t yet set up for internet. He has a phone line and no account. Out in the public space we have a potential account (on the Tablet) but no phone line. I find I am using capitals in my notes. NEED phone line!

As well as our attempts to enlist a phone line in the Centrelink office (beyond the whiteboard), we have tried to use a land line in the Council office. It lies behind a heavy desk and is impractical for multiple users. Jo has also, inexplicably, become inscrutable. She seems unwilling to help with organizing another line. I call Telstra but find that businesses have to work through a specific contact person. Jo gives me his name but when I speak with him I feel silly asking questions he knows she knows the answer to. It is terribly hot and humid in the ‘space’ which can’t be closed during the day. I ask one of the builders about glass for what used to be a big sliding window and he is optimistic; says there is plenty in one of the old Council sheds and he’ll ask about it.
On 8 November I record ‘talk talk talk’ with folks from a philanthropic funding body, who are visiting Ramingining. Everybody has ideas about who else is interested in remote internet projects! On 11 November I have another frustrating conversation with Jo re the phone line.

2.8 A place to live takes centre stage, enrolling other actors

The next day I drive the five hundred and sixty kilometers to Darwin to start looking for a van. From university I keep in touch with Amanda and she negotiates a contract between me and the Council. They will match the money I put in. She makes that crucial link between the talk and the things! I find a second hand van and a relocatable shower and toilet unit. They will both have to come out on the barge. The whole thing involves fork lift trucks (at both ends), talk about plumbing and water and power, finding out what makes up a power box and locating the parts, hours wandering the lanes of a hardware store trying to imagine what I will need to live in a caravan for a year. Now the term heterogeneous engineer doesn’t even sound like a metaphor!

Although I return to Ramingining in early December and the van and wash-house arrive soon after, it takes till the end of January before it has been assembled and more weeks before I have running water and a shower and toilet .. and eventually hot water. I have a satellite dish before any of these.

A Government project (HiBIS)\(^{44}\) has offered subsidized satellite dishes to people living in remote places, that is, to people who can find their way through the negotiations, contracts and phone calls. I have to guarantee a clear line of sight to the satellite which hangs out in the sky somewhere west of Ramingining. Someone has to be found to pick up the dish (this huge bulky thing) from the barge, store it at the Council sheds and finally deliver it to the van. The various tradesmen I approach seem maddeningly nonchalant about this. When it finally arrives I understand. It is tiny and light! On 5 February a technician arrives by plane and installs it with a borrowed ladder, leaving behind him a curious collection of excess pieces of odd-shaped bits of metal and bolts and a trail of paper work and signatures. I am in an eighteen month contract which will connect the caravan (and the tent now pitched beside it) into the internet but the terms seem generous .. and thus feasible.\(^{45}\)

\(^{44}\) HiBIS = Higher bandwidth Incentive Scheme DCITA (2006), 'Higher Bandwidth Incentive Scheme'

\(^{45}\) My delight is temporarily tempered by learning that Ramingining now has NextG satellite coverage. When I enquire I find that yes, the rollout was somewhat secretive! But in the end the satellite modem attached to the wireless proves to be a robust and versatile setup, more useful than one NextG connection.
It still takes hours of experimentation, more phone calls and intensive help from an IT savvy friend before the internet comes to life on my computer in the van and on the Tablet in the tent, but apart from one day when I have to restore a code, it never falters for the next ten months.

2.9 The computer is still searching

The satellite dish, the modem in the caravan, the radio router, the tent, the tables, the books and endless cups of cold water, cordial and tea - all the bits which became our iNet café in the ten months to come - is born here in early February 2007. But back from Darwin, in mid December, I had taken stock of the public access to computers in the town:

At the Women’s Centre the internet has been down since a recent storm. I call our IT person and he tells me to try turning the satellite connection on and off. It works!

The kids have been playing with Bulany’s iMac and all the programs have been put in the trash, even the games. Its only affordance now is writing with a simple text program.

In the Council space the PC computer has problems again. We still have the Tablet with its potential internet account but no phone line. Jo isn’t talking to me. We still have no glass in the window.

But by early January, with work stalled at the library building, Amanda is talking about developing a temporary library/Knowledge Centre in the Council space and reorganizing the entrance to Centrelink so the space isn’t a thoroughfare. She is sure there must be a free phone line somewhere in the building. I have cleaned the space but its badly worn lino is etched with the red oxides of our local soils and it bespeaks neglect - the sort of neglect computers eschew. I enlist help from the school: a stripper and polish. It turns out Chris, the ‘IT savvy friend’, also has stripping and polishing experience. By the end of the month the space is dramatically transformed. We bring over more tables from the old library. Chris also tries to restore the programs on Bulany’s iMac but doesn’t succeed.

On 24 January a big storm blows out the power board and the surge protector at the Women’s Centre. From Darwin, David says that experienced people call these devices expensive fuses. (So in electrician-speak they are expensive fuses. In ANT-speak they are translators of power, but not just of electricity. They translate the agency of storms, of the people who keep the precarious power supply in place, and who know about power boxes and fuses and what to do about them .. and the relationship between those people, usually Balandas, and the town. ANT is always doing this. Making something small big! I was talking about a power box.)
David organizes replacements for us. On 30 January a Telstra technician tells us there are no free lines at the Council building and we will have to order a new one. It’s an easy job, he says, Amanda will know how. Jo will know how, says Amanda.

There is a lag in the time it will take for the pieces of this bit of the network to talk to each other, and in this lag-space two other bits reach out to touch in a way we hadn’t yet envisioned. They inspire a new idea. Boxes of old computer bits yield enough lead to run a phone line from the Council space, across the breezeway at the back of the building, to the phone line in Bulany’s office. A length of poly pipe to run between the buildings and protect the lead eludes us, and so it has to be taken down everyday, but we are excited to be online at last in our public space!

In February we now have three internet access places:

- in our temporary ‘library space’ via a long lead and Bulany’s office;
- in our new iNet café in the tent at the van, where we now have speakers on the Tablet and are playing music; and
- at the Women’s Centre, because Chris restores the power board there, sent by David from Darwin.

Amanda is replacing her computer so says her old one will come to the library space. She orders our phone line on 7 February. Bulany and I go looking for the container, reputed to be down behind the Council sheds on the edge of town, where more of the furniture and all the library books and have been lying idle for years (now in disheveled and dusty boxes) and we lug some of the shelving back to the Council. A hose from the van helps with the laborious task of cleaning it. There is one tap and it needs a key to turn it on. Finding the key enrolls new actors each time it is needed. The space looks impressive but without glass in the front window the flies and heat are oppressive. We have to pack up the phone line every time we go away. There is no toilet nearby.

A school leaver comes to work with me. She is very computer literate and great at helping people. She stays a couple of days.

On 21 February Telstra comes and installs two new phone lines right beside our computer desk. For a while the network dissolves and as we use the computer, for banking and games, it seems so small, so compact. We almost lose sight of the work and all of the happenstances which have brought it to life.

In early March we are glad to have our phone lines but the problems inherent in the space continue. The computer isn’t so small after all. Its need for links with NTLIS and Amanda, for a start, become obvious and I try to enlist them. I say that the ‘space’ can’t
accommodate a properly functioning Knowledge Centre. It is hot and insecure and Jo doesn’t seem happy with our being there. Maybe we could work in with the Women’s Centre and operate from there? Amanda is cautiously optimistic but we will need to discuss it with Wamuttjan. But unbeknown to all of us, other actors have been at work, silently and assiduously.

2.10 Powerful movers

On the 5 March, only two weeks after we get our own phone lines, the ants do what a succession of CEOs and consultants haven’t managed to achieve in years. They cut the power to the Council building and precipitate the move to the old library building. It is worth imagining. For years the translation of tiny mouthfuls of soil into the lining of the building have done nothing but extend the ants’ domain - the soil itself a translation of ancient plant matter and rock. And now one ant deposits one more mouthful and brings about the final, irreversible blackout.

And it doesn’t just move the Council. It dismantles our newly assembled place for a public computer, albeit just a corner in a room with a desk, a polished floor and a new phone line. But while the ants have been decisive, the move doesn’t happen automatically. There is a tense meeting at the Women’s Centre where all the options are discussed. Maybe some of the services, such as TCU or the library, could move there, to the Women’s Centre? Wamuttjan is nervous. Jo is adamant. Definitely not the library! Amanda knows I’m disappointed and suggests we order a NextG internet account that day. I think she is trying to mollify me, to hold the precarious link between Jo and I together while all around us so many other links have been broken. But the next morning she tells us no, we are all moving to the old library building. No exceptions and no more discussion. A huge amount of energy and goodwill is catalyzed by this decision at last and the site is soon swarming with people, brooms, mops, furniture and boxes. A rare sense of working together evolves as Balanda and Yolngu come out of their closed offices and find themselves in an open space. It seems computers are at work too, Balanda computers this time .. demanding they be used in clean places.

Builders are summoned and windows at the end of the old adult education room are crafted to make service windows for TCU and Centrelink. The library end is designated as an open plan office for Amanda, Jo, and Bulany and in one corner a ‘library space’. Alas we are still working in ‘spaces’ and even when some phone lines are found and urgently reinstated to keep TCU and Centrelink operating there is nothing in the library corner. We are back to borrowing, planning and hoping. There is no obvious sign of Yolngu being willing or able, just now, to create a public place for their computer access, nor of enough Balandas adding their weight to tip the balance and ensure it happens. Even the public access computer itself is stopped in its tracks. It doesn’t have the power to conjure up its own place here in this
new configuration of people, things and spaces. In the tumult of demands for essential services in the general move of the Council, Centrelink and TCU it doesn't have the power to demand its own phone line and without access to the internet its alliance with money, music and shops is broken.

Over the next few weeks I spend a lot of time on the end of a broom wondering if the vantage point (for watching the civics of the town in operation) is worth it. So little computing can now be achieved from this corner of the room and a few attempts to make it have some signs of a library (by lugging more shelving from the library container and putting out some books) seem futile. The books gather more dust than interest. And as well as letting in the dust, the open breezeway between the two ends of the building leaves us (in our library corner) more on the edge of a thoroughfare than in an actual corner. We don't even have the eddy-space of our bit of the old Council building.

On 12 March I take stock. We need an internet account. We need a computer with a bigger screen; the Tablet is proving difficult for people with eye sight problems; I need to be able to talk more easily with Jo, who is after all the coordinator for all the IT matters at the Council.

The next day there is a positive development. Galidjan comes to work with us, part time as a receptionist and part time with me as a ‘Community Library Officer’ as we (somehow) reconstruct a library (somewhere). Meanwhile we try to construct our time in our ‘library space’ but it soon becomes obvious there isn’t much for us to do there. Without their phone connections our computers lose their power to attract .. albeit still nagging for those lines to be restored and still able to entertain with games of cards.

On 16 March I have a frustrating discussion with Amanda and Jo re computers. There is talk of the library inheriting computers from them both and also ordering new computers with the funding from NTLIS but nothing is resolved. I am dependent on Jo for everything, even stationery.

On 20 March Telstra comes and puts in new lines but not yet for our library corner. Again I contemplate my position: de facto cleaner or excellent observation point? I express my frustration to Amanda and suggest I stop working these hours in the Council but she is under enormous pressure. It’s up to you, she says. A few days later she suggests she and I share a NextG account. Jo doesn’t want the library to buy one; she suggests we can use a satellite internet point which is now active in the new Centrelink office. I go in there and try to log on but I encounter questions I need Jo to interpret and it is in an awkward place to work .. awkward for me and awkward for the CentreLink employees. It would be even worse if we tried to bring people in here to do their banking. Later I briefly get access though the Tablet computer by plugging in at Galidjan’s receptionist desk but the line is only transiently
available. It is rerouted to be used by TCU, as the much more direct route to money. Just as ANT predicts and as happens now daily, it is in these times of conflict, times when things just don’t hold together, that the heterogeneous casts of actors that are so invisible in functioning networks, come on stage.

We are without a phone line but we inherit Amanda’s laptop. We now have potential access to three, including the two Tablets from the university, but the older of these is displaying problems - an inconsistent delay in responding to keystrokes - and the newer one is being shared with the iNet café. That is our good news. The iNet café is working well .. although only when I am there. I am still spending four to six hours a day at the Council. I no longer do training at the Resource Centre.

2.11 The Knowledge Centre assembles at last, as a place for a public access computer

The need for another space, a ‘place’, is getting urgent as I am now working on an application for funding through the Backing Indigenous Ability (BIA) project. We need to be able to say we have a secure, workable public space to put new computers. I try to enlist the authority of BIA in my negotiations (as the ANT writers have shown others doing46). On 24 March I have a ‘this is it’ meeting with Amanda and Jo. Amanda comes up with a new idea. She suggests I move into the portable which she and Bulany have just vacated, their old offices, behind the old Council building. Although the main building was decrepit this portable was in good condition. It is secure and has air conditioners in both rooms. The phone lines are still there and although the power has gone (via the ants) it is about to be rerouted in order to keep the fuel bowsers working and could be reconnected to the portable. Another wait! But it sounds promising at last. At least to me. Jo is unconvinced. If we improvise too well they (funding bodies for a potential new building with a brand new Knowledge Centre?) will leave us to it, she says, and besides, nothing will work without full literacy and numeracy training and someone here to follow up. Everything she says has merit but it leaves us standing. (Is this the agency of pessimism which the material semiotics of ANT has helped me to slip around?) Amanda insists we act and I am eager to move.

Later that day I go to order some equipment at the Council. We’ll need a printer in our new Knowledge Centre and I want to get a drawing tablet to use with our laptops. In a burst of frustration I record in my notes: But – no phone! No internet. Jo says we need to install the satellite software (on Amanda’s old laptop) but I need to locate the software from Amanda. Too much happening and too many links remain unconnected. I talk with my supervisor back at the university and he helps me make a decision. I decide in future to spend each morning back at the van and the iNet café.

46 For example the scientists in Callons story about the scallops. Callon (1986a), ‘Some elements of a sociology of translation’. 
In April I put in the BIA application. We (Yolngu and Balanda representatives of the Council) have applied for four computers: two for our Knowledge Centre in the portable we are about to take over, one to be set up in the Council for general public access, and one replacement for the Women’s Centre. (We don’t know it but this application will be successful. We will anticipate the arrival of our new computers and all their affordances. They won’t arrive that year. When I return for two months in 2008 they will still not have arrived.)

Meanwhile, on 12 April, Telstra is back and we get a phone line at our library desk at the Council. The next day we get Amanda’s old desktop PC (with a potential satellite account which is not yet set up). We also have her old laptop but it only has a dialup account. Jo has not yet set one up for the library per se and so when we need it I use my own personal account. We go on using the Tablet at the iNet café.

On 23 April a new Community Library Officer starts work with me. Bilindyjan and I open up the two rooms in the portable which is to become the KC and start to clean them. We open on 9 May. We have:

- Bulany’s old iMac but only for text practice,
- the Tablet shared with the iNet café, but at this site dialing into a university account,
- Amanda’s old laptop which dials into my personal account,
- a new drawing tablet with Painter software,
- a TV and DVD player,
- a few tables and chairs,
- one phone line,
- satellite hardware we can’t yet use.

But it feels good! On 15 May Jo sets up a computer for satellite internet access back in our old library space at the Council. It becomes known as the ‘the Council computer’. The town now has four public access sites for using the internet.

The insistent pressure exerted by the computer and by people during these months - the demands of the computer for a place, the demands of people for access to internet banking - has finally broken through. Places and the computers they shelter and offer, suddenly proliferate. If we hadn’t followed this story, step by step, we might think it was some inertia of technology itself, gaining momentum at last, or a final showdown between social forces, the power plays of Balanda perhaps. But we have taken the slow road and watched this part of Ramingining being assembled bit by bit, each actor enrolling or failing to enroll another, and so assembling the extended networks which now begin to collapse around us into functioning objects, with tidy boundaries. Albeit not quite.
Many material actors participated in preparing the space in the old Council Building for use as a computer access point. Just weeks after the phone lines were connected the ants cut the power and we all moved.

In November the space had power again and it had been transformed into a music studio.

Figure 4.1 Translations in the space in the old Council Building

Photos: Anthea Nicholls
The portable building that became the KC. Some simple material actors were enrolled to help.

The DVD player was set up in a doorway.

In school holidays it could draw a crowd.

Many actors, human and non-human worked together to transform the space.

Figure 4.2 Old Council offices become the Knowledge Centre, Photos 1-6: Anthea Nicholls; Photos 7-8: NTLIS Darwin
On 30 May I record that I can’t find the lead for the power supply for the satellite hardware in the Knowledge Centre. It is almost another two months before we get access to our satellite account. On 11 July one of the IT trainers from Darwin tries unsuccessfully to get us connected through our old laptop. On 24 July Jo gives us her old PC and comes over to connect it up for us. On finding how slow the connection is she also lends us her NextG card. On that day I record that we have four different ways to connect to the internet in the Knowledge Centre:

1. a dialup account paid by the university on the Tablet,
2. a dialup account I pay for on the laptop,
3. a satellite account on a PC at last paid by the Council library funds, and
4. a temporary loan of the Council NextG card.

This unaccustomed surfeit soon settles down to the slow satellite connection and my personal account on the laptop; we use the Tablet with the satellite at the iNet café. It isn’t until 22 October that Jo upgrades our satellite account. I have also been trying to get an upgraded modem so that we can connect it to a wireless and have multiple access as we do at the iNet café, but I don’t succeed. Because it requires Telstra to upgrade the modem only Jo can organize it. Despite repeated requests it never happens.

The number of access points in the town now waxes and wanes, depending on which connections are ‘up’ and ‘down’, and when the sites are open. Only the iNet café in the tent is potentially available everyday, but it still relies on me being there … most of the time.

We purchase iMacs for the Knowledge Centre with NTLIS funding and these are used for photos and video work as well as the database ‘Our Story’. In August two indefatigable workers from NTLIS come out and help to move (and clean) the rest of the library shelving and the huge collection of books from the container. They rationalize the space and so from 3 August the Knowledge Centre at last even looks like a library.

It has taken eleven months to find this cool, secure, connected space and another three to craft it into this working library-cum-public internet access place. We have watched its assembly and in the process saw the enormous amount of work it involved, where work did not mean just human work, but the activity of a totally heterogeneous cast of actors, each with a role to play. When each actor played their part, the actor they in turn enlisted either responded by complying or resisted. Sometimes these resistances undid the network, sometimes they created new opportunities.
As a result we saw both the extent and fragility of the network which constituted, not just this Knowledge Centre, but this thing I have called ‘public access to computers’.

We saw this network nearly assembled several times, in different places, and in each case we saw it fall apart, reassembling somewhere else. We even watched it break into several networks, which eventually stabilized (for a time) as the iNet café, the Knowledge Centre and the Council computer.

And having followed so much of the action as it was assembled, what else can usefully be said? I said at the outset that I would tell this story by paying attention to two ideas: the concepts of place and object. I enlisted several voices to help me say that place is tricky and that when we talk about it we can end up talking about objects and what they are and wondering if it matters. I want to return to this story and see if it matters here. I want to see if the various metaphors for object-ness which I found so seductive in the ANT texts are in fact useful here in Ramingining.

**Heterogeneous engineering**

As Law has shown, the early ANT studies focused on objects that behaved like networks.\footnote{Law (2002), 'Objects and spaces', p91.} In doing so they developed the metaphors of heterogeneous engineering and the heterogeneous engineer.\footnote{Law (1987), 'Technology and Heterogeneous Engineering'.} I took on this metaphor and watched the waxing and waning network which was assembling a place for a public access computer. It has already influenced the way I have told the story itself. But I also took seriously Latour’s challenge, when he said, ‘Every time you hear about a failure of science, look for what part of which network has been punctured.’\footnote{Latour (1987), *Science in Action*, p249.} I saw that each time the place for a public computer began to assemble and each time it failed, different sets of actors were involved and I looked for that puncture. I saw that sometimes a break in one network was an opportunity for another. In this network object world there was a struggle.\footnote{Just as ANT predicted. See for example Law (1987), 'Technology and Heterogeneous Engineering', and Callon (1986a), 'Some elements of a sociology of translation'.} Successful links were the result of successful enrollments, when one actor managed to enlist the affordances of another, and it in turn resisted being distracted by a third. I got to watch this happening.
Although we began with a working computer in the Women’s Centre it didn’t represent a public access computer as there were people who didn’t feel comfortable coming there. A break (a conflict followed by a resignation) in the Council office - the falling apart of a particular network - created an opportunity for the computer to move there, with me. But the network remained trapped in talk until Amanda, with access to keys and authority to act (with her links in turn to funding and certain bits of paper and the agency of signatures) opened doors and helped lift heavy objects. A small eddy space just out of a thoroughfare, a desk, a computer and a computer bâmara (me), started to clot into a working place. But it soon came up against powerful actors it couldn’t enroll. Without a phone line the computer had little power to enlist, in turn, Yolngu allies. We tried long leads and made detours through a window to try and enlist Centrelink but it resisted. We used even longer leads and Bulany’s office and drew on connections with the university, and were successful, albeit only temporarily. The PC computer proved to have fragile internal connections and died. A visiting Balanda (in a chance opportunity) reconnected it, again temporarily. The heat enlisted us in other ways. It worked against our energy. It drove us away from the space. The tiny air-conditioner tried to resist but without the aid of glass in the window it was overcome. We failed to enlist the connections between the window and the glass we heard was sitting in a shed down at the workshops. There was no toilet nearby. Workers got discouraged.

Then the ants did what a succession of CEOs and a huge amount of money and consultancy had failed to achieve in four years. They cut the power to the building. They dismantled the emergent public access computer space but they moved the potential links to another site. Here, again the absence of a phone line kept the network in a state of limbo. More attempts were made to find active links to the parts of the network ‘out there’ (Telstra, satellites, the internet, banks) that would give this bit of the network here in Ramingining its ability to marshal allies, Yolngu users, to strengthen its connections here. I hunted for such links within the network of the Council itself, including Jo, Amanda and the few active phone lines which were initially assigned to Centrelink and TCU (because of their prior and strong links to money and hence to things like food). There were ephemeral successes but the links proved to be weak. I finally drew on the authority and promise of the BIA.
application to appeal to Amanda and Jo (with their links to other places and keys and the agendas of Council meetings) and a new link was forged: between the place for a public access computer and the portable offices just vacated behind the old Council building. Suddenly the things that were so elusive were available: phone lines, a confined space where an air-conditioner could win the struggle with hot air, a lockable door, power (although we had to wait for the tradesmen to reconnect it). A public access place for a computer emerged, almost ‘suddenly’. It struggled for a while to strengthen its internal links, to get its own internet accounts and satellite connections but the essential connections were all there. Essential? Meanwhile, several months earlier, a breakaway network had assembled in a hot, dusty, open tent, and was thriving! It found a connection via a satellite dish connected to a modem in a caravan, connected to a PhD student in turn connected to a scholarship but also to Yolngu family next door.

In all of this work, and now all of this story telling, what is the allegorical notion of a network doing? It has focused our attention for a while on the small interactions which take place at the points where actors interact, where the bits of networks meet. And we see there that at each point in space and time, either a successful link or a break, occurs. And at each connection we could have concentrated our attention (and this chapter) and mapped the network which spread out from that point, either holding it in place or exerting the pressure which has broken it apart. And we could ask a new set of questions. Why did this break? Why did this hold? Why did some groups of actors prove to be powerful and obdurate in their relationships, bound by powerful ties, while others proved so transitory? These questions will be taken up in chapter six. Here, in this chapter, I want to go back to the question which has already been raised: Why tell the story this way? Why tell this story by thinking about objects, suggesting (for a while) that we were dealing with a network object and then pulling the object apart. Ayre (p97) and Law (p101) have already suggested answers to this question. I came to agree with them but I will add my own answer.

I propose that this way of telling the story evokes an opportunity for humility, hope and creativity. It is humbling because it pits its would-be heterogeneous engineers up against a cast in which keys and dust are allowed to play the same roles as CEOs and government funding organizations. That is, the same kind of role: they can make
or break a link in a network. In this story we get to meet every actor with respect. We are not grappling with elusive social forces that history might propose as powerful and inevitable and academia might propose as worthy of our attention. It is an occasion of real humility. But it is also an opportunity for hope, because a heterogeneous network is a wondrous place to tinker. There are so many opportunities! There are so many ways to be creative. Our creativity was called on again and again, in the event of each network break, be it a human-human break, a human-thing break, an idea-idea break or any combination of this cornucopia of actors. And every now and then there was a hint that this was a way of approaching the world that Yolngu understood, and practised. When Bulany rung his hands at the Balanda talk (talk talk) he was linking us back to the places in the network where we could do useful work.

I have asked the question, ‘So what?’ ‘Why conjur up these metaphors?’ and I suggest here that this is one of the answers. This metaphor is an occasion for humility, hope and creativity. But I tried other metaphors too.

I found my way to these other metaphors by thinking about place. The long and arduous search for a place for public access to a computer seemed to come to some sort of conclusion when the network we called the Knowledge Centre finally clotted. But could we really call this a ‘place’? Well, yes and no. There were many days when place-ness (as Dourish describes it) visited us. There is a glimpse into one of these days in the account in chapter two; days, even weeks, when lots of people used the space and our activities were guided by shared understanding of why we were there, and what books and computers and videos could be used for. Chapter five will show that one hundred and forty-five people used the computers, an underestimate of how many came. We even sold tea and coffee and ice-cups which gave me (the Balanda) a sense of the versatility and usefulness that I associated with public places.

And there were a few signs that the space was also being drawn up into and performed in a Yolngu sense of place. This particular part of the town had been ‘the Council’ for so long it was unlikely it held particular family associations, but nevertheless, as chapter five will also show, our biggest users were family, related
either to the Community Library Officers (CLOs) who worked with me, or to me, by their adoption of me.

However there was also a sense in which we never became a ‘place’. I had imagined that a library full of books, with computers and air conditioners, would be an attractive place to work. I had imagined that I had a good understanding of the difficulties Yolngu experience in Balanda-type work sites and programs and that these could be overcome. I was surprised at how difficult it proved to find and to keep CLOs over the next five months. Ultimately the characteristics of places which Dourish has identified, which were so resilient at the Women’s Centre, just weren’t there in our Knowledge Centre. However well we got on, my co-workers and I were not a community of practice; we did not truly share understandings about what libraries represented and we never really clotted an alternative consensus of what we wanted to be. There was a sense in which I didn’t even share such understandings with NTLIS.

I had been involved in several training workshops with NTLIS and was aware of their commitment to their understanding of the role of a library and its potential for promoting literacy in remote communities. I was also aware of their commitment to the database, ‘Our Story’. I had already, back at the university, been caught up in current debate about the use of databases in Indigenous Knowledge practices and the work of Bowker, and others, in challenging the hegemony of western ways of dealing with knowledge, so embedded in computer software. I was struggling with the multiple ways these understandings were absent in the model of a library/Knowledge Centre I was being paid to set up and run. In fact for some months I chose to work as a volunteer to manage this disquiet. I eventually compromised and believed the experiment was valid.

I was grateful, in this context, for the language of ANT. I recognized that I was resisting the enrolment of NTLIS and my CLOs were resisting my enrolment of them. Partially. Like a trapdoor to a parallel tunnel this idea links into the question

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raised at the beginning of this chapter. What counts as an object? And what sort of object was this ephemeral ‘place’ that the Knowledge Centre became? Some days it was just an empty locked building behind the crumbing relic of the old Council in a lonely part of the town; the condoms scattered in the breezeway in the mornings, testifying to its remoteness. Other days it was a buzzing bee-hive of a place with kids, computers, books, music, adults, banks, photos, videos, chairs, tables and ice-cups all caught up in performing our Knowledge Centre. What was it? A partial Knowledge Centre?

And what of the account of the search for it, or rather for a public computer site, laboriously, over the eleven months in the account above? What was I actually looking for? What was it that kept appearing and disappearing? Now in a corner of the Women’s Centre, now in the terrible old Council space, now in its new manifestation reflecting in its polished floor and connected across a breezeway by a line taken down each day. Now lost again, thwarted by ants, and reappearing albeit reluctantly and shabbily in the corner of the new Council site. Finding a home at last in the sturdy, lockable, air conditioned, dust-free spaces of a portable.

It took eleven months. And yet for the last three months it had actually been happening elsewhere, in a totally un-sturdy, un-lockable, hot, dusty tent!

Public computer access. No stable boundaries. No stable internal relations between all its parts. And yet it keeps on appearing, flowing around each barrier placed in its way. Surely it is a fluid object. To use Law and Singleton’s words, ‘a set of relations that changes .. something that both changes and stays the same.’\textsuperscript{52} Note that they also say that staying the same may depend upon changes.\textsuperscript{53}

But if it is a fluid object it is like the water in Arnhem Land. Sometimes it goes underground, or dries up altogether. Law and Singleton also talked about such objects, especially when the various ‘appearances’ of the objects seem to be different but are in other ways not only resiliently connected, but are in some way dependent on each other; that they are even generating each other from spaces that are ‘other’ to

\textsuperscript{52} Law and Singleton (2005), 'Object Lessons', p338, emphasis in original.
\textsuperscript{53} ibid., p339
each other. Such objects are probably not fluid like. Fluids break under such pressures. They used the metaphor of fire. Fire is another familiar object in Arnhem Land, so common no-one wonders when they see it wandering around in the bush next to the town. It runs quietly through a log, flares up in a stand of dry spear grass, dies down again until it catches in the bark of a tree and burns again, all night, to die briefly in the morning with the fall of the tree. It is a great metaphor for the object at the centre of the account above.

But does it matter? Does the way we think about an object make a difference to how we behave in relation to it?

Asking again:

Why engage in this sort of ontological choreography

In another account I could describe the story above as an heroic version of the story I told first, of the place for a computer as a network object. In this story I was persistent and determined and flexible .. a lot of the time! The object was a fragile network of pieces located in Euclidean space (including ants and geckos as well as hard drives, phone lines and leads) and working in a network of stable relations (between Telstra and the phone lines, between Jo and the order book, between Amanda and Bulany and the Council, between Wamuttjan and waku). As a heterogeneous engineer I strategized, I ‘interested’ and enrolled the parts. I was flexible and adaptable in the face of their resistance. I too was enrolled by and resisted others. We succeeded in all the translations that were necessary so that in the end a network object, the public computer, was held precariously in place. And reassembled each time it fell apart.

It is one way to tell the story and I told it to myself often enough during the eleven months of searching for the Knowledge Centre and the seventeen months of the project. But it is an exhausting story. When I tell it the other way it does make a difference, to me. When I focus on the object itself (of which I was a part) and recognize its shape changing, boundary changing nature in the water and fire metaphors which were so familiar to us in Ramingining, I feel myself relax. I don’t have to tidy this object up. I don’t have to rationalize the contradictions: clean, safe,

54 ibid., p347.
cool vs dusty, open, hot; publicly funded vs privately funded; comfortable for this family but not for that. Nor do I feel a strain on the complex links between them, of which I am very much a part. Not quite as relaxed as the designer of the Zimbabwe Bush Pump - who would visit the pumps without his kit of spare parts55 - I am nevertheless able to relax (on my better days) into the complexity and its demands on me; to become the multivalent actor which I believe was so essential to this particular (kind of) object and to surviving the stresses between the lines in the account I have just told.

Is this enough? Is this a justification?

Here is another way to say this. How do we approach complexity if we agree that tidying it up is sometimes suspect? One of the practical, applicable ideas which comes out of ANT is the idea that there are creative ways to do this. And one of these is to approach with new metaphors at the level of ontology. This is because what we believe something is, affects how we approach it. Is this an angel, a devil or a trick apparition? In each case we approach differently. Is this a messy Euclidean network or a new type of object? What if, however much our minds insist that if we tidied it up it would come out as a neat network (like say, alcoholic liver disease if we all got our act together), in reality that isn’t going to happen? What if the complexity, in these cases including the complexities of human nature, is just not going to resolve into neat networks? In such a case we get a choice. We can go on only thinking of them as potential network-like objects which are regrettably messy and we can act accordingly (yes, they may keep us humble and inspire our creativity, but they may also frustrate and exhaust us) or we can propose another way to encounter them, as objects which are more like something else, such as fire .. something which we recognize every time we see it even though it comes and goes, relating through continuity and discontinuity. We know this so we treat fire differently from the way we treat say, electricity or water. In the end it is only a metaphor. If it helps we use it. I argue here that it helped.

De Laet and Mol also believed it was important; that how we describe and relate to objects may, as they said, 'contribute to an understanding of technology that may be

55 de Laet and Mol (2000), 'The Zimbabwe Bush Pump'.

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of help in other contexts where artefacts and procedures are being developed for intractable settings which urgently need workable tools.’ 56

‘May be of help’, they say. For me in Ramingining it often enough was reason enough, since it seemed we were indeed involved in developing artefacts and procedures in an intractable setting which urgently needed workable tools. But there was something else at stake here, in this business of allowing something to be messy, partial, multiple, by the way we describe it. Ayre asked this question differently (Why tell such a complex story?) and Law has asked it too.57 And he has already suggested another reason why attending to how we approach objects can be important.58

When potentially messy objects are tidied up in certain ways; when potentially multiple objects are only allowed to manifest as one of their singularities, something has been othered. Something has been disallowed.59 For us here in Arnhem Land, Ayre has shown us what those somethings may be: if they had not worked so hard to keep the multiplicities of Nanydjaka/Cape Arnhem in place, it could too easily have been the techno-scientific stories, with their links to funding, which othered the Yolngu realities of place there. Too often this is the othering which takes place. Western ontologies other Indigenous ontologies; Balanda ways of organizing materialities in Indigenous towns dominate local ways.

So did allowing the place for a public computer to be a messy object - inspiring humility, hope and creativity in its network-like materializations, and encouraging relaxed adaptability to its disconnected, messier manifestations - actually allow real agency to Yolngu, and other non-Balanda actors, in this story? This question still has to be answered, but a part of that answer is in what happened next.

56 ibid., p226, emphasis mine.
57 Ayre (2002), 'Yolngu Places and People', p124; Law (2007a), 'Making a Mess with Method'.
59 ibid.
The Knowledge Centre had been created during the dry season when the air is wonderful. Most days we put out tables and chairs in the breezeway, with books and magazines. If enough kids were interested we wheeled our TV trolley to the door of one of the rooms and put on a DVD which could be watched from the breezeway. NTLIS ran training on using the database and had gathered archival photos of Ramingining to put on it. These photos, mostly of a school trip to the snow which had taken place 20 years ago, drew phenomenal interest and we made money by selling copies of the photos. People began to bring in old photos stored at home and I began to enroll a few interested people in learning how to get them into the database. Internet banking, listening to music, playing with photos and computer games were our most popular uses. Our heterogeneous cast all played their parts and held the computer in place, in its turn enrolling us and keeping us there. Then a new actor came on stage: the build-up season approached. It wasn’t so pleasant sitting outside but our small spaces couldn’t accommodate crowds. The air made us all tired. I recognized that we needed new ideas and projects to develop new computer interests and skills (our network needed to expand in order to remain stable) but I was coming to the end of my fieldwork and I didn’t have any more energy for new ideas. I started looking around for someone who might know more than I did about such things. Besides, Wānut, one of my ‘sons’ who had gone to the IT workshop at the Resource Centre, was now coming regularly for training to the iNet café, and I let my interests focus there.

But meanwhile, during September, the community had been getting ready for a music festival. Every latent and unpracticed band in the town now came out in the evenings to practice on the school basketball courts with whatever equipment could be scrounged from the school or around the town. The air was thick but buzzing on those nights. My van was just near the court and the music went into the small hours but the excitement and energy and the sheer talent was so good that few of us felt like complaining. A visiting builder and I got chatting.

A: These bands just need an opportunity to take the next step.
B: My brother runs programs that do that, through Charles Darwin Uni.

And so it happened. A chance link became another link between our Knowledge Centre and the university. I contacted his brother and we used the affordances of phones and computers to strengthen this link. Soon twenty Yolngu teenagers and adults were enrolled in a Certificate II in music. The university sent out Allen Murphy and a container load of equipment. And there was no place for him to set up a music studio! Again Amanda and I searched the town. In the end, we came back to the space in the old derelict Council

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60 I have used Allen Murphy’s own name, as his talent, commitment to music in remote Australia, and his sheer energy and love for his work deserves recognition.
building (where the floors were at least still polished.) An electrician restored power to one wall, bringing it across the breezeway as we had done months before with our phone line.

Musicians descended on this space and on the Knowledge Centre. The joint ‘space’ was soon a ‘place’ crisscrossed with leads and packed with equipment and bodies. It was so hot that they couldn’t function without their one meager air conditioner and the power couldn’t support it and those in the Knowledge Centre. When we forgot to take turns we blew the fuse and had to search across the sweltering town for the person who had the key to the fuse box. We typed lyrics on the computer. Allen set up his editing equipment beside our computers and we watched fabulous footage over his shoulders as the bands created their film clips to accompany their music. Bits and pieces of our former activities happened, or didn’t… some internet banking, playing games. Musicians hanging around might pick up a book to browse. As they collected their film clips, their ‘studio’ spread out from the Council building and the Knowledge Centre and re-appeared in all sorts of places: in a floodlit patch on a dark stretch of road, on the school oval, in a local water-hole, and even in the bush the night they built pyres and set it alight for fire to dance by. The Knowledge Centre as its workers and I had developed it - itself a variation on how NTLIS may have envisioned it - dissolved and reemerged as this new thing. This noisy, sweaty, creative (fiery) object.

I had asked a question. Did the way of approaching and describing a place for Yolngu access to a computer, which I have used in this chapter, allow for a potential multiplicity of place and agency which included Yolngu? Did the ‘ontological choreography’ practiced by ANT and applied here, allow for agency and voices which may have been silenced if only one version of a Knowledge Centre or public access place had been envisioned? This story is suggesting yes. Other stories, in the Interlude after chapter five, will also show the multiple Yolngu/Balanda ways we did our computer places. Yet more stories, in chapter six, will reinforce this by showing what happened when this flexibility and multiplicity was denied.

Summing up

This chapter has documented a search for a place for Yolngu access to computers in Ramingining, in 2006-2007. It has told the story by paying attention to the ideas of place and objects. It invoked several voices to say that multiple places can be performed in particular spaces, and has shown how this turns attention to the

61 Their work resulted in the CD-DVD production Dunganda Street Sounds: New tracks from Ramingining released in January 2009.
questions, What counts as an object? And, does it matter how we think of objects and approach them? It took seriously ANT’s challenge to engage in ‘ontological choreography’ in answering these questions and experimented with metaphors other ANT writers have used in doing just this. It found that as a ‘heterogeneously engineered’ network such a place could inspire humility, hope and creativity. It found that as a disappearing-reappearing ‘fiery’ object it enabled us to stick with it, and to be open to its possibilities, including its resilient manifestation as an iNet café in a tent and its triumphant emergence as a music studio.

Chapter five will now spend time in the Knowledge Centre and the iNet café during the months after their assembly, when they were used for computer access. Again it will refer to a discussion which arose in ANT. It is yet another discussion in response to a concern which has already been noted here; a concern about what gets ‘othered’ whenever something gets described, especially when we decide on what sort of an object it is. In this chapter I will look at what happened when our computer places underwent a translation into a new sort of object - what ANT calls an ‘immutable mobile’- in this case, statistics. I will present the statistics I gathered and ask, What do they tell us? What don’t they tell us?
Chapter 5 - Following strange actors: Statistics

*It is worth asking of any theory, What does it need to get rid of in order to work?*

*Phillips 1995, p35*

In chapter four, with its enthusiasm for watching the way we encounter and describe objects - and suggesting that this influences how we behave towards them - the question of what gets *othered* in the process was only raised in passing. In this chapter I will focus on it. I will focus on it in a particular activity which often happens around computers in remote towns: the making of statistics. The story I will take up goes like this:

We have seen something of the heterogeneity of the networks involving computers in Ramingining. Touch any part of that network and then trace the network one way or the other and you will touch things, people, animals, places, weather, ideas, organisations, money, music. We have touched all of these. Now, if we go on tracing these leads, we will very soon touch bits of government: local government, state, federal. We find people employed in government agencies, we find government funding. And we find statistics. We find complex heterogeneous networks being translated into neat tables of numbers, whether they be numbers with dollar signs in front of them or numbers telling how many people in a particular place used a computer in a certain time.

ANT has been very interested in this process. Latour has documented it at work and shown how it is part of a process of performing centers of influence, as opposed to peripheries of jurisdiction. He has called the objects, created in this work, immutable mobiles and shows how these objects travel, appearing to stay the same and to represent the original networks. They appear to do this, he says, because of a vast work which makes of the world a place where such things are not surprising: where figures in a table or on a map on a laboratory or government desk, are seen as being faithful representatives of a reality out there. Latour called this work metrology.¹

In this chapter I will examine some statistics - made by the Australian Bureau of Statistics (ABS) - which purport to represent Ramingining, as a part of Indigenous Australia. I will note that these statistics are important actors in the processes of policy building and funding through which government engages with Indigenous Australia, especially in engagements to do with computers. I will argue that because statistics are such important actors in these relationships it is important that they do good work and I will suggest that one way in which this issue can be addressed is by asking what gets othered when statistics are made and carried away from the site where they are made.

I will make some statistics of my own. I will compare them with ABS statistics to see what kind of work this can do but more importantly, I will make visible the work by which they were made, the metrological choreography involved, in order to show that statistics may be more or less accountable, more or less located, in their relationships with the places where they were made. I will propose that this influences the efficacy of the work they can do. I will suggest that ANT, in its making visible the heterogeneous engineering involved in such work, provides a way of understanding statistics as actors and effects of actions, which allows us to do good metrology.

And in all of this we will go on watching the computer in Ramingining, seeing something more of its life there.

ANT’s own discourse on ‘othering’

But first an aside. I have set this chapter into a discussion of othering. I have invoked Adam Phillips to ask, What does any theory need to get rid of in order to work? I did this because I am interested in what statistics get rid of in order to work, especially the processes by which they do this very othering. But given that I am drawing on ANT’s semiotic toolkit in order to do this work - of watching this process - the question obviously begs to be asked, What does ANT have to other in order to work? What othering (or otherwise) has it been up to? Such questions elicited a rich discourse in the period which became known as After ANT.
Star was an early contributor to this, with her provocative reminders of perspectives that tend to be neglected: the voice of lab technicians or janitors beyond the voice of the scientist, the person who doesn’t eat onions in a McDonald’s world, the transsexual in the anteroom, awaiting an operation to become recognizable as a male or female person.²

In 1994 Lee and Brown suggested something else; that in proposing such a successful theory of networks, the ANT theorists had brought themselves to ‘the limit of the post-enlightenment ambition’ in devising a system of thought that could colonize, order, and unify everything.³ That is, that ANT had actually done away with the other!⁴ They said:

If we presume all to be equal from the outset, we are then in a position to follow the production of inequalities within a network by such procedures as translation, interessement, enrollment, and the creation of obligatory points of passage. But is this strategy as innocent as it seems? Are there any grounds for being suspicious of universal enfranchisement?⁵

Lee and Brown suggest that on this path, the other is suddenly no longer there,⁶ that this is actually an act of colonization,⁷ an attempt to tame or domesticate the other, and in a sense, to other it. But they then go on to acknowledge the work that was starting to appear at this time which was taking such criticism seriously, and finding new ways to talk about traditionally othered fields, such as mess and minorities: the emerging work of Star, Callon, Mol and Law, all grappling with what Lee and Brown refer to as ‘fractal strategies’.⁸

Eventually such studies became the familiar voice of ANT in the 90s and beyond, with studies by Mol, de Laet, Singleton and Law all ‘working up’ the vocabulary which was saying, yes ANT did try to colonize the ‘other’ and yet didn’t enfranchise it .. didn’t really listen. What’s more, those other voices don’t necessarily sound like the actors in network-like relations; sometimes they sound like moving water, or crackling fire. They said, here is something that is more than one but less than many. They drew on the language of mathematics and topology to recognize fractal and

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⁴ ibid., p774.
⁵ ibid., p778.
⁷ ibid., p779.
⁸ ibid., p786.
multiple and changing relationships. They said, multiple is not plural; this is not perspectivalism. It was a heady time. I have already visited it in chapter four. It has been well reviewed by Law, and the ideas have been taken up again by others, such as Gad and Jensen and Neyland.

Gad and Jensen conclude that post-ANT emerges from this period as a ‘postplural attitude’, where the notion of multiple theories and methods each providing a new perspective [implying a complementary set of others] is set against ANT as a ‘transformative entity’; ‘a dynamic assemblage of ideas and practices’. Such an entity maintains a dynamic relationship with its own ‘others’, producing, confronting and in turn being changed by them.

Neyland reports on a way in which ANT was used to help a university faculty, floundering in messy procedures, to redefine these unruly, othered aspects of its operations and to find a way forward. He believed in the efficacy of this ‘ambiguous work’ not only in giving people strategies to deal with messiness, but to avoid what he calls the ‘theoretical discontent’ inherent in this discourse on what is or is not being othered.

So in its reflections on the business of othering, ANT and its critics have carried two concerns: ‘To other and not to other’. It addresses the importance and potential efficacy of acknowledging typically othered voices on the one hand, while needing to say that ultimately, it is impossible not to other. As Law says (after Derrida), ‘as we seek to know the world not everything can be brought to presence. However much we want to be comprehensive, to know something fully, to document or to represent it, we will fail.’

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12 Gad and Jensen (2009), ‘On the Consequences of Post-ANT’.
15 Neyland (2006), ‘Dismissed content and discontent’, p29,40
He says, this is not (necessarily) a matter of technical inadequacy. What is necessary is that when something is made present - such as a representation of the world - something else is made absent; in this case the world itself or the world’s ‘out-thereness’. The issue then is not that we other, but how and what we other. It is always potentially political and ethical. Whose reality gets to step forward and whose gets covered in a particular representation? Moreover, as Akrich has shown, the performances in which actors are constituted are always co-constitutions. As statistics are created, they partake in the negotiations which always take place between interacting networks. They purport to represent but they also make.

It is in this context, of ANT having its own self-conscious history of grappling with issues of othering, and this reminder that while it is inevitable it is not a neutral act, that I take up the challenge of this chapter: to use ANT as a tool to examine othering practices at work in Ramingining, in the making of statistics.

In Science in Action Latour gives an ardent account of numbers as the ultimate means for translating the complexities of reality into tidy packages, packages that can then be moved, compared, bought and sold, stored and exchanged for profit; the ultimate immutable mobiles in the modern world. He shows how these translation practices were crucial in the colonizing activities which enabled governments in Europe, for instance, to bring back ‘parts’ of places (maps and numbers) from the other side of the globe, and lay them on desks, hang them on walls, and use them to legitimate ownership and government from a distance. The work was done by cartographers, geographers and scientists. But he also shows that this was only possible because of a larger translation, whereby the world out there was translated into a place where the representational value of these numbers was not questioned. He called the process metrology. He said,

It is impossible to transform ... turbulences, people, microbes, electrical grids and all the phenomena out there into a paper world similar to the one in there [in the scientists’ laboratories]. This would be without allowing for the ingenuity of the scientists in extending everywhere the instruments that produce this paper world. Metrology is the name of this

17 ibid., emphasis mine.
18 Akrich (1992), 'The De-Scription of Technical Objects'.
20 ibid., chapter 6.
gigantic enterprise to make of the outside a world inside which facts and machines can survive. Termites build their obscure galleries with a mixture of mud and their own droppings; scientists build their enlightened networks by giving the outside the same paper form as that of their instruments inside. In both cases the result is the same: they can travel very far without ever leaving home. 

I can for instance, dip into the world of Indigenous Australia without ever leaving my desk, be it anywhere in the world. I can consult Australian census data and study the figures in say, Table 5.1.

Table 5.1 Use of IT in week before census, by Indigenous and non-Indigenous peoples, August 2001

<table>
<thead>
<tr>
<th>Location by remoteness*</th>
<th>Persons (x1000)</th>
<th>Using a computer at home (%)</th>
<th>Using the internet at home (%)</th>
<th>Using the internet overall (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indig</td>
<td>non-Indig</td>
<td>Indig</td>
<td>non-Indig</td>
</tr>
<tr>
<td>Major Cities</td>
<td>123.0</td>
<td>11,753.0</td>
<td>27.7</td>
<td>46.3</td>
</tr>
<tr>
<td>Inner Regional</td>
<td>81.8</td>
<td>3,619.5</td>
<td>22.8</td>
<td>40.9</td>
</tr>
<tr>
<td>Outer Regional</td>
<td>92.0</td>
<td>1,735.5</td>
<td>16.0</td>
<td>38.1</td>
</tr>
<tr>
<td>Remote</td>
<td>34.0</td>
<td>254.8</td>
<td>10.2</td>
<td>39.6</td>
</tr>
<tr>
<td>Very Remote</td>
<td>71.1</td>
<td>82.9</td>
<td>2.7</td>
<td>37.8</td>
</tr>
</tbody>
</table>

* Ramingining comes into the ABS definition of ‘Very Remote’. 

Source: Use of information technology by Aboriginal and Torres Strait Islander peoples (cat no 1301.0) (ABS 2004).

These are the sorts of figures that, once reified, are drawn up via sociological pipettes into theses, debates and policies. The National Aboriginal and Torres Strait Islander Social Survey (NATSISS) was specifically designed, it says,

.. to deliver a variety of statistics to inform public policy and programs in areas such as health, housing, education, employment and social and cultural well-being.

The figures are produced in complex, heterogeneous networks as acts of translation and they then become actors in new networks (also) enmeshed with governments and research bodies. When there is a paucity of data they are recycled year after year. They are quoted in articles about the ‘digital divide’ and proposals for what might be

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21 ibid., p251.
23 ABS (2008a), 'National Aboriginal and Torres Straits Islander Social Survey (NATSISS)', paragraph 4.
done to address such inequalities. See for instance Daly’s 2005 argument for community online access centers, even though these are 2001 figures.\textsuperscript{24} This paucity was noted in the Regional Telecommunications Inquiry in 2002.\textsuperscript{25} Despite its recommendations (to the ABS to take a leading role in rectifying this) the next Regional Telecommunications Review, in 2008, draws not on new figures but on case studies - another type of translation used to represent a ‘reality’ out there.\textsuperscript{26} Both types of representation - figures and case study descriptions - undergo further translations to become generalizations and even unstated assumptions. The Review tells us that

\textit{… use of broadband by Indigenous communities, even when it is available, is low.}\textsuperscript{27}

The South Australian Government noted that despite programs targeted at increasing internet access, ‘… there is still a lack of viable access to computers and limited capacity to use digital technology and programs in these communities.’\textsuperscript{28}

We are expected to believe it. Just as Akrich suggests, a negotiation has gone on between the few figures and case studies collected and the ‘reality’ out there. The later has emerged as a generalization: a place where internet facilities (and Government intervention to provide them) is so obvious it no longer needs to be demonstrated. Here perhaps is Shay’s new ‘measure of man’: people who are ‘not wired/connected’.\textsuperscript{29}

In 2007 the Federal Government announced the Backing Indigenous Ability program. It provided $36.6 million to address this digital divide, offering to provide telecommunications infrastructure, support and training, including public internet facilities to 150 communities.\textsuperscript{30} Ramingining was a successful applicant to this program in 2007 and yet, when the facilities had not materialized by 2009, a phone enquiry elicited only oblique references to problems, in carrying out the program’s aims. Instead, a new $30 million program was being announced. The Indigenous

\begin{flushleft}
\textsuperscript{24} Daly (2005), ‘Bridging the digital divide’.
\textsuperscript{25} DCITA (2002a), ‘Regional Telecommunications Inquiry: Connecting Regional Australia’, p172.
\textsuperscript{26} DBCDE (2008), ‘Regional Telecommunications Review: Framework for the Future’.
\textsuperscript{27} ibid., p70.
\textsuperscript{28} ibid.
\textsuperscript{29} Shay (2003a), ‘Connectivity as the Measure of Man’.
\end{flushleft}
Communications Program\footnote{DBCDE (2009), 'Indigenous Communications Program'.} now proposed to deliver (along with community telephones):

… expanded public internet access and delivery of computer training in up to 120 remote Indigenous communities that have limited or no public access internet facilities.\footnote{ibid.}

There is no attempt to persuade anyone that there are at least 120 remote communities out there without public internet access, and certainly not to reassure them that there aren’t a great many more, despite the large sums of money involved. Latour’s metrology has been at work and has completed the transformation: the world out there can readily be described by a few numbers on a government desk (and now on computer screens).

If such uses are being made of such numbers it is important to understand the processes by which they were made, and to do so remembering the lesson of material semiotics: that the process was both an othering and a co-constitution.

*Examining some statistics for what they (don’t) tell us - for traces of what has been othered*

The figures in Table 5.1 only purport to tell how many people in various categories used a computer or the internet in the week prior to the census. Certainly, if someone used a computer in their home one can assume that a computer was there. We have no idea however, if it is still there, if it belonged to that household, if it was an old cast-off computer to play games on or a new laptop with all sorts of potential. But yes, the figures show us a pattern. If you are an Indigenous person living in a very remote part of Australia, you are sixteen times less likely to have used the internet at home than an Indigenous person in a capital city, and twenty-five times less likely than a non-Indigenous person living in the same territory.

The *National Aboriginal and Torres Strait Islander Social Survey 2002* (NATSISS)\footnote{ABS (2002), 'National Aboriginal and Torres Strait Islander Social Survey (NATSISS)'.} asked more comprehensive questions, including where computers were accessed: in the home, someone else’s home, school, work place, or a community library. This time however the category ‘very remote’ isn’t used and
computer/internet use referred to the last twelve months. (Where might the computer be now?) However the figures allowed comparisons such as these in Table 5.2.

Table 5.2  Computer use by location and remoteness, 2002

<table>
<thead>
<tr>
<th>Location</th>
<th>Remote</th>
<th>Non-remote</th>
</tr>
</thead>
<tbody>
<tr>
<td>home</td>
<td>45</td>
<td>10</td>
</tr>
<tr>
<td>other home*</td>
<td>35</td>
<td>15</td>
</tr>
<tr>
<td>work</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>school</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>library</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>TAFE**</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>

* The home of a neighbor, friend or relative
** TAFE or other Tertiary Institution

Source: NATSISS 2002 (Cat no 4714.0), (ABS 2002), p49.

Sociologists respond (understandably) by drawing attention to the inequalities in such statistics, and noting signs of hope, for instance that the inequalities in this data are least in schools. 34 It is always comparison which gives any of these numbers a meaning, and soon I will compare them with numbers I found in Ramingining. Although of course I didn’t find the numbers at all; they weren’t there to be ‘found’. I had to make them. 35

But however figures are obtained, even comparisons can be problematic. This is where the art of metrology, as Latour described it, comes in; the ingenuity by which the world is translated into a sort of statistics laboratory, where all differences are made to disappear except the answers to the questions. If the questions stayed the same (which we have control over) then the data collected in response is deemed comparable, and able to travel. How the question was understood (which we don’t have control over) is ‘othered’.

In August 2006 a group of government employees arrived in Ramingining bearing the 2006 census forms. Together with some local Yolngu - and always strictly controlled by the forms - they interviewed people and recorded answers. The forms were taken away, and subsequently translated into tables of numbers which could be accessed on the internet. I did access them and marveled. One of the tables told me that out of six hundred and fifty-two people counted in Ramingining in August 2006, two hundred and seventy-seven spoke only English at home. This was obviously a mistake, since another table confirmed my own data, that there were approximately fifty non-Indigenous people there at the time and I knew of only a few Indigenous residents in Ramingining who didn’t speak either Yolngu Matha (the majority) or Kriol (a few) as their first languages, and certainly as the languages they used in their homes. I subsequently approached all of the tables with caution, including the one which said that four Indigenous households had an internet connection, type not stated. I strongly suspect that this figure too represented ‘question misunderstood’, since I knew of no Yolngu households with an internet connection at that time.

I have been privileged here. I was there and was able to do as ANT insists: to follow some of the actors. I had, moreover, come with my ANT bämara mala, alerted to the processes by which a world can be translated into a statistics laboratory using the same kind of heterogeneous engineering by which we assembled a place for computer use in Ramingining. But I also had another very good reason to understand the particular moves by which metrology works, as I was already engaged in them myself, gathering/making my own numbers. I could not hold up my numbers, in contrast to the ABS data, as some sort of accurate map. I was too aware of their shifting status. The survey conducted in July 2006 (see Table 5.3) of the computers in the town was printed out neatly by my computer but subsequently adjusted in pencil as I discovered more computers over the following months, in locked rooms, old cupboards, places I hadn’t thought to look.

The data in Tables 5.4 to 5.6, constructed from the survey sheets which recorded our use of the computers in the Knowledge Centre and iNet café, were similarly shape-changing objects for months, as I worried over how to count (Is this person Yolngu

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36 ABS (2006), 'Census of Population and Housing, Ramingining: B12 Language Spoken at Home'.

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or Balanda?  What do I mean by an encounter with a computer? Are these occurrences of the same name the same person?) By the time the data appears these issues have been resolved, and if deemed significant they make appearances in small print, carefully balancing clean data against acknowledgements that these results maintain small (now deemed insignificant) errors. The notes at the bottom of the ABS version of Table 5.1, for example, tell us that people whose Indigenous status,

### Table 5.3  Computer numbers in Ramingining, July 2006 and November 2007

<table>
<thead>
<tr>
<th>Place</th>
<th>Total number of computers</th>
<th>Computers available to Yolngu</th>
<th>Public Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Council</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Gov Bus office*</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TCU (credit union)</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Centrelink</td>
<td>(1)</td>
<td>(1)</td>
<td></td>
</tr>
<tr>
<td>BRACS**</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Batchelor***</td>
<td>(2)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library/KC</td>
<td>(2)</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Comp Project</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ALPA (store)</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>RHRC†</td>
<td>9 + (5)</td>
<td>12 + (3)</td>
<td>2</td>
</tr>
<tr>
<td>Bula'bula Arts</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Women’s Centre</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Clinic</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>School</td>
<td>53 + (12)</td>
<td>88</td>
<td>36</td>
</tr>
<tr>
<td>Yuyuŋ Nyanaŋ†</td>
<td>3</td>
<td>1 + (4)?</td>
<td>2</td>
</tr>
<tr>
<td>MAF (airline)</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Personal</td>
<td>25 + (2)</td>
<td>31 +</td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>108 + (24)</td>
<td>161 + (8+)</td>
<td>36 at school + 11</td>
</tr>
<tr>
<td></td>
<td>132+</td>
<td>169+</td>
<td>47</td>
</tr>
</tbody>
</table>

* Government Business Managers came to remote communities as players in the NT Intervention.

** BRACS is the local radio broadcasting unit.

*** Batchelor Institute operated a classroom in the same building as the old library.

† Ramingining Homelands Resource Centre

‡ Yuyuŋ Nyanaŋ was at the time a locally owned Aboriginal Corp holding the Kava license.

( ) Brackets represent computers not working or not being used.

? & + Question marks and plus signs leave traces of uncertainty.
or location, were not stated or clear have been excluded. My own results have absorbed errors due, for example, to not being able to determine how many ‘Sonyas’, ‘Silvias’ and ‘Shielas’ used our computers. One of my investigations concluded with a dismissive remark, as my informant walked away, that there were indeed dharrwa (many) Sonyas!

And what happened when this sort of messiness was ‘othered’ from the numbers I collected from my survey sheets? Tables appeared: temporarily stabilized and looking as though they might be compared with data made elsewhere; objects whose history and network connections (and the one hundred pages of drafts out of which they grew) have been put aside. Tables 5.4 and 5.5 are two of these objects.

Table 5.4 Encounters and uses of computers in the KC and iNet café, Feb-Nov 2007

<table>
<thead>
<tr>
<th>Encounters*</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>Ma</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>595</td>
</tr>
<tr>
<td>iNet café</td>
<td>38</td>
<td>38</td>
<td>98</td>
<td>65</td>
<td>59</td>
<td>22</td>
<td>83</td>
<td>69</td>
<td>94</td>
<td>50</td>
<td>641</td>
</tr>
<tr>
<td></td>
<td>38</td>
<td>38</td>
<td>98</td>
<td>91</td>
<td>129</td>
<td>142</td>
<td>183</td>
<td>209</td>
<td>183</td>
<td>125</td>
<td>1236</td>
</tr>
</tbody>
</table>

1236 total encounters

<table>
<thead>
<tr>
<th>Uses*</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>Ma</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>498</td>
</tr>
<tr>
<td>iNet café</td>
<td>17</td>
<td>30</td>
<td>68</td>
<td>37</td>
<td>36</td>
<td>23</td>
<td>56</td>
<td>51</td>
<td>80</td>
<td>69</td>
<td>467</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>30</td>
<td>68</td>
<td>57</td>
<td>97</td>
<td>161</td>
<td>125</td>
<td>151</td>
<td>158</td>
<td>101</td>
<td>965</td>
</tr>
</tbody>
</table>

... and 965 uses

* If three people together used a computer for a particular use on two occasions, this would be recorded as 3 users, 6 encounters and 2 uses.

Table 5.5 Yolngu computer users at the KC and iNet café, Feb-Nov 2007

<table>
<thead>
<tr>
<th>Identified Yolngu Computer Users*</th>
<th>Women</th>
<th>Girls</th>
<th>Men</th>
<th>Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Centre</td>
<td>47</td>
<td>30</td>
<td>35</td>
<td>33</td>
</tr>
<tr>
<td>iNet café (not counted in KC)</td>
<td>23</td>
<td>18</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Attempts/Requests</td>
<td>9</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>79</td>
<td>48</td>
<td>56</td>
<td>42</td>
</tr>
</tbody>
</table>

207 users

225 potential users

* These figures include the number of identified Yolngu who were involved in a computer use, not just the person at the keyboard. For Balandas using these computers see Tables 5.11 - 5.12.

Unidentified people have not be counted here as it was not possible to eliminate redundancies. However since unidentified encounters represent 8% of the total number of identified Yolngu encounters, the total potential users above could be estimated as 243.
Two hundred and twenty-five people, (and more whose names were not recorded),
eleven months of computer using, hundreds of pages of notes and draft collections of
figures made from them, computers and their programs - designed to make the task
easier - memory sticks, filing cabinets, nervously sent emails backing-up against
potential losses (of power, computer, memory sticks, paper); these have all been
translated into several small tables. To make comparison possible.

The agency of comparison

All this heterogeneous engineering, this assembling of people, places and things and
translating them into numbers, has been to enable comparisons; to allow numbers to
act on each other. While numbers are the effects of the heterogeneous networks of
bureaucrats, researchers, forms and tick-boxes on the one hand and people, places
and computers on the other, the numbers now get to work in other networks. They
invoke inequality. They link up with ideas about democracy and justice. They
become the allies of policies and funding applications.

But note that if I want to compare my figures with the ABS data I need more
metrological maneuvers. My data has to answer the same questions asked by the
ABS forms. And the questions have to be answered by the same groups of people.
ABS data uses age-group categories while I have used functional categories: the
‘women’ and ‘men’ in my lists include 15-19 year-olds who have left school, while
this age group is also represented in the columns of ‘girls’ and ‘boys’ (who are still at
school). Table 5.6 makes visible some metrological choreography. It extracts the
15+ year olds from the data and then counts how many people in this age group and
older were ‘regular’ users of computers. Here ‘regular’ will mean that they used a
computer at the Knowledge Centre or iNet café three or more times, or that they
came at least once and are known to have access to computers in a work place or the
school.

The table also adds a row of ‘other users in Ramingining’. These are people I knew
of, who were using computers elsewhere - in their work places, at the Women’s
Centre, or in their tertiary study - but who did not get recorded as using a computer at
the Knowledge Centre or iNet café during the survey period. However I have not
tried to estimate this number for the 15-19 year olds, given the common use of computers in classrooms at the school. According to ABS data, there were eighty-nine young people in the 15-19 age group in Ramingining and outstations in August 2006. Twenty-four in this age group were registered as students at the school at the end of 2007. Twenty-three of these came to the Knowledge Centre or iNet café to be involved with a computer in some way. While fifteen of these twenty-three could be identified as ‘regular’ users, others may well have used computers regularly at the school.

Table 5.6 Estimating computer users (15 years and older) in Ramingining, Feb-Nov 2007

<table>
<thead>
<tr>
<th>Category of computer use</th>
<th>women 20+ yrs</th>
<th>women 15-19 yrs</th>
<th>men 20+ yrs</th>
<th>men 15-19 yrs</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramingining residents involved in computer encounters at KC or iNet café</td>
<td>59</td>
<td>16</td>
<td>36</td>
<td>15</td>
<td>126</td>
</tr>
<tr>
<td>‘Regular’ users at KC or iNet café *</td>
<td>30</td>
<td>10</td>
<td>14</td>
<td>5</td>
<td>59</td>
</tr>
<tr>
<td>Other users in Ramingining **</td>
<td>10</td>
<td>+</td>
<td>5</td>
<td>+</td>
<td>15+</td>
</tr>
<tr>
<td>Estimated users</td>
<td>40</td>
<td>10+</td>
<td>19</td>
<td>5+</td>
<td>74+</td>
</tr>
</tbody>
</table>

- **59 people** (15 years or older) who used the KC and iNet café computers in 2007 were ‘regular’ users or users in other contexts.
- There are at least **74 adult computer users** in Ramingining.

* These numbers represent people who came to the KC or iNet café three or more times, or who came at least once and are known to have access to and use computers in the school or a work place.

** These numbers represent people who use computers in a work place, a tertiary education course, or at the Women’s Centre but who did not use them at the KC or iNet café in 2007. It does not include people who undertook training, such as that described in chapter two.

Note how the caveats multiply as I try to make my data comparative. I also have to delve deeper into the traces from which this data was extracted if I want to compare it with ABS data, because I need to know how many people used the internet. Tables 5.7 and 5.8 record the numbers of people using the internet and internet banking respectively.
If I now combine my data with population statistics from the 2006 census, I get Table 5.9, with percentage figures for encounters, estimated users, and use of internet banking and internet in the Knowledge Centre and iNet cafe in 2007.

Table 5.9 Calculating percentage of computer users in Ramingining 2007

<table>
<thead>
<tr>
<th>Yolnu residents 15 years and older</th>
<th>Women</th>
<th>Men</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ram and outstations population 2006</td>
<td>280</td>
<td>277</td>
<td>557</td>
</tr>
<tr>
<td>Encounters 2007</td>
<td>75</td>
<td>27%</td>
<td>51</td>
</tr>
<tr>
<td>Estimated users</td>
<td>50</td>
<td>18%</td>
<td>24</td>
</tr>
<tr>
<td>Internet use at KC &amp; iNet café</td>
<td>51</td>
<td>18%</td>
<td>37</td>
</tr>
<tr>
<td>iBank use at KC &amp; iNet café</td>
<td>34</td>
<td>12%</td>
<td>17</td>
</tr>
</tbody>
</table>

23% of Ramingining residents encountered a computer at the KC or iNet café. 13% of residents are estimated as computer users. 16% used the iNet and 9% used iBanking at least once at the KC or iNet café.
Note what I have been doing. I have been engaged in the ontic work of making groups of people. I have followed the lead of the ABS and allowed a fifteen year old person to become a ‘15+ women’ or a ‘15+ man’. I have given them a shape and defined their activity: they can now be counted or not counted, to show that use is going up or down. They don’t need to be a confident computer user or a regular user. It doesn’t matter if they wanted to do iBanking so urgently they overcame a shyness to approach a computer, or if their love of new things and music caught them up in a whole new passion. All that gets othered. They have one agency only. But as a group they get to do more, again defined by the particular network they have been drawn into. For instance, in the next table these numbers have been placed alongside numbers from the 2001 and 2006 Census data. It allows for more comparison.

Table 5.10 Comparing internet use in Ramingining 2007 with ABS data for Indigenous internet use/access

<table>
<thead>
<tr>
<th></th>
<th>remote</th>
<th></th>
<th>very remote</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>at home</td>
<td>anywhere</td>
<td>at home</td>
<td>anywhere</td>
</tr>
<tr>
<td>ABS 2001*</td>
<td>3.8%</td>
<td>9.3%</td>
<td>0.9%</td>
<td>4.0%</td>
</tr>
<tr>
<td>ABS 2006**</td>
<td>21.3%</td>
<td>7.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ramingining 2007***</td>
<td></td>
<td></td>
<td>16%</td>
<td></td>
</tr>
</tbody>
</table>

* 2001 ABS data recorded use of the internet in the last week before the census. Source: Use of information technology by Aboriginal and Torres Strait islander peoples (cat no 1301.0) (ABS 2004)

** 2006 ABS data recorded access to the internet in households. Source: Table 20.2 Internet Access by Indigenous Status by Remoteness (cat no 8146.0.55.001) (ABS 2008b)

*** Ramingining figures were for internet use, at least once in the KC or iNet café in 2007. If two people came to do or get an internet task done they were both counted, even if they didn’t use the keyboard themselves. It is nevertheless an underestimate of internet use as it does not count use at other sites.

But notice that this particular table is remarkable for its blank spaces and assumptions. The 2001 census asked questions re use at various locations in the community in the week prior to the census. The figures released from the 2006 census purport to indicate access to the internet although they were calculated from household data, not community access data as in 2001. A commentary on the relevant tables as published by the ABS admits that the information available from the two Censuses is not directly comparable, claiming however, that
.. a close match for accessibility was achieved for 2001 Census Internet question by assuming use at home by individuals equating to dwelling Internet access. With technologies such as mobile Broadband not being in existence in 2001, this assumption is considered to be realistic. It should be noted that this assumption will cause some undercount of the number of dwellings with Internet access, for situations where the dwelling had Internet access but use was not made in the week prior to the Census night.\textsuperscript{37}

It seems that the comparison of oranges and apples is justified, given that it is more ‘realistic’ than a comparison between oranges and mobile phones. It continues:

The commentary also acknowledges a possible overestimation in the 2006 data, ‘of the number of persons actually accessing the Internet in that dwelling, especially for population groups such as the elderly, the disabled and less educated’.\textsuperscript{38}

And I too have acknowledged an approximation. My figure represents an underestimate, given that it is based on Knowledge Centre and iNet café access, excluding other sites, including homes. Note too that if I were to estimate home use of the internet in Ramingining 2007 it would relate to a fleeting period when one household had potential access to the NextG account on the laptop of PM (see Interlude 2, Item 10). It is nothing like the 7.8% suggested in this table.

So what work are these highly moderated numbers able to do? I can take into account the trends, ratios and under/overestimations and see that Ramingining in 2007 (with an enormous amount of work) kept pace with some trends across remote Australia, and that those trends are ‘up’.

But does all of this work amount to just this? A little sigh of relief? The digital divide is still wide, but we aren’t doing too badly. Is that all? I want to suggest a lot more.

Retracing the work of making statistics

To do this I need to travel further back along the traces left by the work that created these numbers. I want to uncover first some of the figures that got ‘othered’, as they were summed and divided. I want to comment on what these figures themselves might mean, without comparisons. I want to conjure up some of the other actors

\textsuperscript{37} ABS (2008c), 'Patterns of internet access in Australia, 2006 (cat no 8146.0.55.001)', Summary Commentary, #2.4 Comparison with results from 2001 Census.

\textsuperscript{38} ibid.
which couldn’t answer yes to the particular closed questions which were asked by the survey forms and so were never tallied. I then want to raise the issue of good metrology.

But first, here in Tables 5.11 and 5.12 is the data from the Knowledge Centre and iNet café which made Table 5.4 possible.

These two tables represent late stages in the sequences of translations which have transformed the traces of the original encounters - between real people and particular computers in specific places - into the few immutable mobiles which can be placed up against the ABS data from other places. But they are still rich with information. They tell us for instance that over ten months in 2007, one hundred and fifty-six people came to the iNet café and encountered a computer in some way - in over six hundred and forty encounters - and were involved in four hundred and sixty-seven uses. Comparisons aside, that is a lot of use for a couple of computers in a tent. And given that the tent and yard were always open, and the caravan seldom locked, it is a remarkable testimony to the ‘placeness’ - in the sense chapter four suggests - which the site managed to develop during this time.

The figures are equally impressive for the Knowledge Centre, especially if you invoke the stories of chapter four, of its difficult struggle to find and maintain a presence in the town, let alone in its almost forgotten relocatables behind the old derelict Council building.

We can now see that the internet bankers of Table 5.8, over sixty of them, were involved in two hundred internet banking activities. Although the information has been collated here, the records show that they were either getting registered, checking balances or transferring money between accounts. Or attempting to do so. Happily the records show that successful encounters significantly outnumbered attempts. The number of recorded requests, which weren’t met, is also low, although this number will be an underestimate as there must have been times, surely, when people asked to use the computer (say on a day like that described in chapter two) when I could neither respond nor recall the request later, to add it to my lists .. but I don’t believe there were many.
Table 5.11  Computer Use at the Knowledge Centre, 22 May to 26 Nov 2007

<table>
<thead>
<tr>
<th>Users</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>women</td>
<td>47</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>men</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>girls</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>boys</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>attempts</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>requests</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>balandas</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A total of 168 users at the Knowledge Centre..

<table>
<thead>
<tr>
<th>Encounters</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>women</td>
<td>11</td>
<td>29</td>
<td>34</td>
<td>28</td>
<td>42</td>
<td>15</td>
<td>13</td>
<td>172</td>
</tr>
<tr>
<td>men</td>
<td>12</td>
<td>16</td>
<td>9</td>
<td>21</td>
<td>20</td>
<td>26</td>
<td>9</td>
<td>113</td>
</tr>
<tr>
<td>girls</td>
<td>1</td>
<td>10</td>
<td>47</td>
<td>24</td>
<td>17</td>
<td>9</td>
<td>13</td>
<td>121</td>
</tr>
<tr>
<td>boys</td>
<td>0</td>
<td>7</td>
<td>22</td>
<td>6</td>
<td>15</td>
<td>22</td>
<td>12</td>
<td>84</td>
</tr>
<tr>
<td>unnamed adults</td>
<td>0</td>
<td>7</td>
<td>5</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>unnamed kids</td>
<td>6</td>
<td>4</td>
<td>13</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>attempts</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>12</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>requests</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>balandas</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>18</td>
<td>7</td>
<td>2</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>70</td>
<td>120</td>
<td>100</td>
<td>89</td>
<td>50</td>
<td>595</td>
<td></td>
</tr>
</tbody>
</table>

..engaged in 595 encounters

<table>
<thead>
<tr>
<th>Uses</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
</tr>
</thead>
<tbody>
<tr>
<td>internet general</td>
<td>5</td>
<td>13</td>
<td>20</td>
<td>6</td>
<td>9</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>iBanking</td>
<td>14</td>
<td>18</td>
<td>22</td>
<td>15</td>
<td>23</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>other</td>
<td>1</td>
<td>30</td>
<td>91</td>
<td>34</td>
<td>46</td>
<td>43</td>
<td>10</td>
</tr>
<tr>
<td>database</td>
<td>5</td>
<td>14</td>
<td>22</td>
<td>8</td>
<td>5</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>61</td>
<td>138</td>
<td>69</td>
<td>100</td>
<td>78</td>
<td>32</td>
</tr>
</tbody>
</table>

.. and 498 uses

Note: If two people engaged in a particular computer use on 3 separate occasions, this would be recorded as 2 users, 6 encounters and 3 uses.

Figure 5.1
Elijah using iMovie in the Knowledge Centre to view video footage of his band practising for the music festival.

Photo: Anthea Nicholls
Table 5.12  Computer Use at the iNet café, 6 Feb - 28 Nov 2007

<table>
<thead>
<tr>
<th>Users</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>women</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>156</td>
</tr>
<tr>
<td>men</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>girls</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>boys</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>attempts</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>requests</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>balandas</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A total of 156 users at the iNet cafe... 

<table>
<thead>
<tr>
<th>Encounters</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>women</td>
<td>6</td>
<td>7</td>
<td>36</td>
<td>13</td>
<td>14</td>
<td>8</td>
<td>11</td>
<td>9</td>
<td>12</td>
<td>17</td>
<td>133</td>
</tr>
<tr>
<td>men</td>
<td>17</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>9</td>
<td>6</td>
<td>9</td>
<td>11</td>
<td>45</td>
<td>35</td>
<td>177</td>
</tr>
<tr>
<td>girls</td>
<td>9</td>
<td>3</td>
<td>26</td>
<td>13</td>
<td>20</td>
<td>1</td>
<td>37</td>
<td>9</td>
<td>7</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>boys</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>22</td>
<td>3</td>
<td>16</td>
<td>5</td>
<td>69</td>
</tr>
<tr>
<td>unnamed adults</td>
<td>3</td>
<td></td>
<td>6</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>unnamed kids</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>attempts</td>
<td>7</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>requests</td>
<td>3</td>
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.. engaged in 641 encounters 

<table>
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<th>May</th>
<th>Jun</th>
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<td>47</td>
<td>33</td>
<td>48</td>
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</table>

.. and 467 uses 

Note: If two people engaged in a particular computer use on 3 separate occasions, this would be recorded as 2 users, 6 encounters and 3 uses.

Figure 5.2   
Joanne’s baby sleeps while she uses a computer in the iNet café. 

Photo: Anthea Nicholls
So already these numbers are doing some work within Ramingining. They are fleshing out the story of the computer, and what it gets up to, but they are also being used as some measure of success as I think about my engagement here, as a researcher and as an intervener in the status quo as described in Table 5.3, July 2006, when there was only one public access computer in the town. But the figures are still embedded, for me, in the networks in which they were made. Those two hundred internet banking acts were not isolated events. I can still recall other banking actors on stage during those scenes. Notes for 10 July 2006, for example, include the following:

- creating fax forms at the Women’s Centre
- faxing to TCU: three iBanking applications
- phone call to TCU re iBanking accounts - fax hasn’t arrived
- more faxes, copying, iBanking: copied the iBanking application by covering the password example on the only one we had
- talking about safety, because of all the paper with personal information left lying around
- making a file for personal information which isn’t taken or destroyed
- much faxing, phoning .. waiting
- sending one fax three times, ‘need signature’, ‘I’ll try a different one’.
- I try witnessing a signature but I’m not a recognized Council member so it doesn’t help.

‘Much faxing’. This was the context of the internet banking. If your money was in an account in a bank or credit union, other than the Traditional Credit Union (TCU) - the one credit union branch in Ramingining - and if you didn’t have a current working card for use at the ATM in the store, then you couldn’t withdraw cash from your account. And if you didn’t have a credit or debit card you couldn’t even use EFTPOS at the store. So you had to transfer your money to a TCU account, or to someone else’s account; someone who did have a card which could be used in the ATM. The faxes were designed to do this, to move money between accounts. But then, only the two credit unions allowed them. The major banks didn’t, or at least only under special circumstances as Glen, Daisy and I found in the long sequence recorded in chapter three.

And the fax transfer process had to be reasonably reliable, so the Credit Unions had lists of the signatures of Council members who could witness signatures. Every
request had to be accompanied by a second page with the mandatory two signatures and you couldn’t save this sheet for next time. No matter how hot the day, and how far away the few accessible Council members were, you had to troop away to get those signatures every time. So people had invented detours. Blank forms with Council member signatures sat invitingly in drawers. I found them on floors. I always destroyed them and said my piece: No, it’s illegal .. the Council members are supposed to be saying, Yes this is so and so. But still I found the signed forms.

And when the forms were signed, one way or another, you had to find a fax machine. You could try the Women’s Centre, the Council, the school .. maybe even the clinic or the Resource Centre. You had to find them when the building was open and the fax machine was working. Maybe you needed someone to help you send it .. someone who knew which way up to place the paper in this particular machine.

My fieldnotes for the year July 2006 to June 2007 record 168 banking events. These events included this faxing but also phone enquiries, tracing lost cards, internet banking, and the filling in of forms: either to open accounts or to register for internet banking. Glen and Daisy’s story tells how these apparently simple events were imbedded in networks of proliferating actors, only a few of which we had any control over. Their story was not unusual, although yes, there were many encounters that were blessedly simple. Someone wanted to do internet banking. The computer was there. Their account numbers and passwords were all present and correct. The computer screen quickly gave us that wonderful little word, DONE.

But those simple figures in the tables - sixty-three people did internet banking, two hundred events, nine percent of the local population - they are not detachable, not really, from the networks in which they were made. You can take them away and sit them beside ABS data, or quote them in other stories, but when I pick them up I can feel them pulling back - just a bit. I can feel the tug of the lines which connect them to the places, the people, the things, the days, the weather, the buildings, the talk, the small victories, the explanations (Anthea, we’re hungry!) and the formulas for survival (Tomorrow!) that were always there. Not to mention the endless drafts of tables out of which the ‘final’ numbers emerged.
But what else did people use the computers for? Tables 5.13 and 5.14 show how the computers were used, and that the most popular uses were internet banking, buying and listening to music on iTunes and playing games (cards and ‘Bubbles’ mostly; we didn’t have any of those noisy, interactive computer games). The Painter tablet (which used the software ‘Corel Painter’) was popular in the Knowledge Centre. Working with photos and videos was also important, and the database, ‘Our Story’ played an important part after it was set up on new iMacs in the Knowledge Centre in July 2007.

What the tables don’t show is that general internet use was Google driven, and that Google images were very popular; a place where words and English weren’t dominant. There were, especially, images of places, of musicians and of things, notably sports boots. Programs which required English literacy, such as Word and Excel, did have their users however these were mostly my co-workers in the Knowledge Centre, Wāmut, who came for training at the iNet café, and the musicians who began to take over the Knowledge Centre in late 2007, and who used Word to record their lyrics.

The original records also show some of the internet sites which were visited, including:

**Google:** for song lyrics, boots (especially puma boots), and once to identify a wasp species . but see also the list for shopping below.

**Google images:** of Milingimbí, Ramingining, Barunga, Bathurst Island, Lucky Dube (a big local hero - we gathered around the computer when he was murdered in October), ‘Snake on a plane’(I had to have this explained to me.)

**You Tube:** Zorba (the Chooki Chooki dancers from Elcho Island, filmed at Ramingining music festival), Akon, Prime Minister Rudd’s Victory speech, Hot Sauce, talking dogs, basketball (*See Anthea, it’s good style!*)

**News:** The Age, Koorie News

**Shopping:** for boots, MP3 software, music, iPODs, DVDs, CDs, computer games, x-box, cars, stereos, keyboards, pushers, prams, phones

**Other sites visited** included: 10 Canoes (the site associated with the feature film set in Ramingining), Google Earth, Yellow pages, TEABA (a local broadcaster), eBay (though I always had to explain that we couldn’t purchase from eBay without a credit card), Metacafe (for soccer and basketball), slack.time.com, My Space, Deadly Mob, Music Outback, Beyonce, ABC shop and ABC kids (ABC being a radio station), and games on the internet: tv.disney.go.com
Table 5.13  Type of computer use at the Knowledge Centre, 28 May - 26 Nov 2007

<table>
<thead>
<tr>
<th>May</th>
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<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
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Total uses 498

Requests which weren't met*  
| | | | | | | |
| iBanking but not set up†† | | | | | | 3 |
| iBanking but not avail†† †† | | | | | | 2 |
| Other use but not avail | | | | | | 2 |

† iBanking attempted but not successful due to problems with access codes or account numbers.
†† iBanking requested but person not registered for iBanking.
††† iBanking requested but computer not available.
* These requests for computer use represent an underestimate as some requests (at times when records were not at hand) were not recorded.
Table 5.14  Type of computer use at the iNet café, 6 Feb - 28 Nov 2007

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</table>

Requests which weren’t met

| iBank but not set up\(^t\) |        |        |        |        |        |        |        |        |        | 14         |
| iBank but not avail\(^tt\) |        |        |        |        |        |        |        |        |        | 1          |
| Other use but not avail |        |        |        |        |        |        |        |        |        |            |

\(^t\) iBanking attempted but not successful due to problems with access codes or account numbers.
\(^tt\) iBanking requested but person not registered for iBanking.
\(^ttt\) iBanking requested but computer not available.
* These requests for computer use represent an underestimate as some requests (at times when records were not at hand) were not recorded.
Other purposes included:

Completing a TAFE Survey
Looking for information: on superannuation, airfares and flights, fax numbers
Accessing forms from Centrelink, and
Printing out photos of second-hand vehicles for sale.

But in general my data collecting did not represent a survey of how the internet was used, as I was just not present at each screen and I didn’t always ask. Table 5.7 says that one hundred and nineteen different people were involved in using the internet. In the over nineteen age group this was predominantly for internet banking. The big internet users were the kids and teenagers. Fifty-three in this age group used the internet at the Knowledge Centre and iNet café during February to November 2007. But population statistics for 2006 put this age group at two hundred and eighty-four. If fifty-three used the internet, what were the other two hundred and thirty-one doing?

Only thirteen percent of people, fifteen years and older, are estimated to be ‘regular’ computer users. Twenty-three percent had at least one encounter with a computer during 2007. Again, where were the other seventy-seven percent?

To explore these questions I want to look even further back along the trail of traces left by the collections of paper and tally marks I collected, to the time before names were lost. I cannot print these names for privacy reasons but Table 5.15 is an example of the data collected - in this case for women using the Knowledge Centre - with the names replaced with miyalk (woman). I have distinguished them only by numbers. The table reveals that although forty-seven women used computers in the Knowledge Centre, many of them (thirty-two) came only once or twice. What is happening here? Are women coming and then having an experience they don’t want to repeat? (See Table 5.15)

Although the names are missing from this Table, they are still in the traces. I know these women and I am able to recreate this table differently, this time sorting the women into groups. (See Table 5.16) These are groups of my making and I have named them and number coded them to get the computer to sort them for me.
Table 5.15  Women (*Miyalk*) using computers in the Knowledge Centre, 22 May – 26 Nov 2007

<table>
<thead>
<tr>
<th>Miyalk 1</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
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<td>7.15 database</td>
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Patterns of use:

- **These are the three women who work at the KC and a family member.**
- **These are some of my close neighbours, who also come to the iNet cafe at the caravan.**
- **These are women who work at the WC and are very computer literate but whose computers are sometimes down.**
- **These are women who work at the school or are related to school employees. They are literate and familiar with computers. Use ranges from once to frequent.**
- **These are women who have come to do iBanking or use the internet. Five out of the ten only come once. The most frequent use was five times.**
- **These women are visitors and only come once.**
- **These women have come to see photos in our database, which was set up in August. By September news has spread of pictures from a school trip in 1980. Many come to see them but as new pictures are added slowly this wave passes.**
I am now able to comment on these groups, as I have done in the last column of this table, in each case telling a short story which is consistent with the pattern of computer use.

Group 1: This group of frequent users are the women who work at the Knowledge Centre, and one family member.

Group 2: This group are my neighbors. They feel OK to come. Why don’t they come more? Perhaps because they have access at the iNet café, only next door.

Group 3: This group of women from the Women’s Centre usually have their own access, but sometimes their computers are down.

Group 4: These women work at the school or are related to school employees. They are literate and familiar with computers. They may find access at the school or at the home of a Balanda teacher, or may come to the Knowledge Centre.

Group 5: This group is only distinguished by internet banking. There is a big variation in the number of times they come. More work on the traces may help to suggest why someone came once or a number of times, but note that those who came more often did so in a relatively short space of time.

Group 6: Visitors came only once, understandably.

Group 7: Lastly there is a wave of people who came to see photos in the new database, when it was installed in August by NTLIS. It had been set up with an inaugural collection of photos from a Ramingining school trip in 1980 which had been located in the NT archives.

The women in this group came and explored the photos, shared their excitement, and maybe came once more, bringing a family member with them. Or maybe that was it, for now. They may well have bought copies of some of the photos; the Knowledge Centre made over one hundred dollars selling them. A small number of people then began to bring old photos to have them scanned and copied, and they all gave permission for them to be entered into the database. Other photos were collected at the music festival, or by teenagers borrowing a camera to take to a ceremony or on a family hunting trip. Several people showed an interest in learning how to enter the photos and data, although the process was laborious and this work and training was slow. Nevertheless the database had shown itself to be an acceptable, welcome player in a town with a growing desire to document aspects of family and community.
life. Alas, it was also the time when I was winding down my own involvement, and other interests were growing in the Knowledge Centre; the musicians were temporarily moving in, as chapter four has told. Chapter six will tell how the new coordinator of the Knowledge Centre lost interest in the database, and how it soon waned. The wave of early interest, evident here in this table, wasn’t repeated.

But in this way, retracing the moves I had made in constructing my data and retrieving what had for a time been dismissed, I was able to find patterns. The patterns above were reassuring: OK, perhaps we hadn’t frightened our clients away!

But the most striking of these patterns appeared when one of my teenage neighbors helped me to add house numbers, or outstations, to my lists of people. When this data then ‘blossomed’ into the patches in Figures 5.1 to 5.4, another whole story tumbled out. Or rather, place came back.

Although all statistics inherently possess an ‘other’ (if twenty-three percent of residents used a computer, that’s seventy-seven percent who didn’t), these particular tables and maps are even more evocative of these missing persons. They tell us something about where those people were from and in so doing suggest at least one reason why. Where? Most of the iNet café users lived in just eleven out of the sixty-three Yolngu homes. There were seventeen homes where no-one used a computer. Why? The sites where the computers were used weren’t just sites, they were also places; places where one might feel comfortable - because the people there weren’t just family, but family members one could freely or reasonably associate with - or not. In November, when Wämput was helping to document the song lyrics for the musicians, he had to explain to me that there was one musician he was finding it difficult to write for. He shouldn’t really be doing it; he was in an avoidance relationship with this man and he would rather so and so did it; he was the right person to do it.

But most of the time people didn’t spell this out for me. They just didn’t come, or they told me something else. There was a group of young men I used to teach, whom I often met in the evenings. Walking the streets was something people did in

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39 This includes uses recorded in the KC and iNet Café in 2007, and three months of use recorded in the Women’s Centre in 2006. Balanda houses have not been included.
Figure 5.3  Computer encounters by dwelling, in the iNet café, Feb-Nov 2007 (children to 14 years)

Figure 5.4  Computer encounters by dwelling, in the iNet café, Feb-Nov 2007 (teenagers 15-19 years)
Figure 5.5  Computer encounters by dwelling, in the iNet café, Feb-Nov 2007 (adults 20+ years)

Figure 5.6  Computer encounters by dwelling in Women’s Centre, three months in 2006
Ramingining in the cool evenings. This group were largely gaminyarr for me (my grandchildren via a son or a brother’s children) and we had happy memories of being in the school. We would greet each other with pleasure. Momu! Gaminyarr! And I would invite them to come to the iNet café. We have the internet there, I would say, sure that young people would find it irresistible. And they would assure me, Yes, they would come. And they never did. Well, not until a pressing need - to burn a CD of the music their dance group needs for the music festival - made it a special mission. Otherwise no. And yet most weekends someone was at the computer in the tent. The maps tell where they were from, and that regular use was concentrated in particular households. Some groups of people felt comfortable coming, others didn’t. Why? Wämut’s account above, reminded me that avoidance relationships are often at work, but then why didn’t more of my gaminyarr come? Other information, the sort that can’t be so easily gathered into tables, seeps out of these maps. I can only trace it because I was there, following the actors in the slow choreography of our days (and years). All of the households represented here by regular use belong in one or more of the following categories. The first I have already indicated:

• The residents of that household or outstation related to me though my adoption into Yolngu family networks, in a way which allowed for easy interactions. Although this adoption told of my relationship to everyone in the town, it placed me in a special relationship to the family that adopted me, and through rom (the law) in open relationships with some family members and avoidance relationships with others.

• However the users of the iNet café also had to feel comfortable about who else they might meet there. Who else frequented the iNet café.

• Most of these households belong to the landowning clans - the speakers of Djinang and Ganalbingu and other related languages - or they have strong relationships, through marriage and rom, with these families. Although all of Ramingining was built on the land belonging to these clans, the caravan and iNet café had a special relationship with them, as the Yuyuŋ Nyanuŋ Corporation - which was owned by these clans - had taken out a Land Use Agreement over this block. It was therefore doubly related to these clans, through both traditional and recent channels. Elders from these clans lived next door to me, and called me family. Their families are represented strongly in each of the three iNet café
maps in Figures 5.1 to 5.3, but most especially in the 15-19 age group, the big users of the internet.

- Many of the household traces also represent children who have been in my classes when I was a teacher at the school. These kids feel comfortable coming to the iNet café and happen to like using computers. As that group of *gaminyarr* demonstrated however, this wasn’t necessarily enough.

- One of the prominent traces records Glen and Daisy’s commitment to internet banking, while another records *Wämut’s* regular training at the iNet café in October and November. However both these households are also represented in the categories above.

The maps are thus not a surprise. Nor is the pattern inherent in Table 5.16, for use of the Knowledge Centre by women, which also shows this kind of un-even distribution.

Nor is the fourth map in Figure 5.6 which shows that the primary users of the computers in the Women’s Centre (during three months in 2006) were from the households where the workers lived. More traces are needed to show the relationships between these workers and the other families represented here as using the Women’s Centre, but the fact that these relationships existed, and that others felt unable to use the Women’s Centre because of these strong alliances, were well known in the town. More than one person told me directly, that they or their family were reluctant to go there. Relying on anecdotal evidence it is feasible to predict that if similar maps were drawn of primary relationships associated with the groups of people who worked in other institutions in the town - the Council, the school, the rangers groups, the clinic - that again distinct patterns of particular users would appear. This phenomenon in Indigenous towns is well known and I will revisit it in chapter six. It is an inescapable player in the story of the computer, as it is in many stories which can be told about resourcing in remote towns. However it is not my purpose here to unravel this story - this complex network of mediators and intermediaries - beyond this point. Indeed, it is not my prerogative to tell this part of Ramingining’s story. It is enough to recognize that family ties and avoidances are big players in determining the who and where, in Aboriginal computer stories.
I have been exploring the question, So where were all the *others*, the people who didn’t use computers in the Knowledge Centre or iNet café? I have said that some of them at least were somewhere else where they felt more comfortable; that kinship, and the *rom* it is imbedded in, are overriding influences in Ramingining. So yes, some people were using computers elsewhere, but still there was a majority of people who didn’t have anything to do with a computer, despite their availability in 2007. Availability? There were seven public access computers for seven hundred people at four sites! Sure that is six more computers and three more sites than in 2006. But as the maps above show, they were not necessarily therefore available to everyone.

None of this tells us a lot about what the ‘other’ people were doing (apart from sending faxes), nor all of the reasons why they weren’t using computers. It has brought back into the story the actor recognized as place in chapter four, and reconnected the story of computers to the story of kinship. But what else? In chapter six we will meet *Gamanydjan*, who told me: I don’t do internet banking and don’t want to; people might humbug me. She is acknowledging that getting involved with computers makes for new sorts of people and relationships. We watched Glen and Daisy negotiating this in chapter three and *Gamanydjan* is here demonstrating that some people made conscious decisions to not enter into these negotiations.

But what else? *Where* else? Well, there were kids on the basketball court. Lots of kids. Lots of the time. There were adults playing cards on home verandas, or under mango trees. Lots of the time. And yes there was television. There was sitting with a family group around a bowl of kava, with or without music.

There were also women returning to town on foot from the bush, laden with pandanas, or the leaves, roots and grasses they use to dye it. Sometimes I went with them and witnessed the time, energy and skill needed to harvest these things .. and others, like wood for didgeridoos and bark for paintings. Back at their homes many were involved in the long processes of stripping, dying, drying and weaving. There were artists too, sitting easily on concrete verandas, bent over intricate paintings. Or they were out hunting. I recall with a smile the urgent scattering of kids from the iNet café if a troupie called by, going fishing.
Then, if someone lived in one of the outstations and couldn’t get a lift in to town or home again, there was all that time spent on the roads, walking. Sometimes kids joined me walking my dog, and if it was the right time of year there was a sort of random movement in our forward direction because of all the forays into the bush, returning with food. There were the local swimming holes, and all the time it took to find someone to drive you there. (Seven kilometers was too far to walk even for a swim, in the hottest part of the year. We had no swimming pool.) Or maybe what took up a lot of the day was looking for fuel, or money for a power card, or some means to send one of those inevitable faxes. And if you did get to send the fax and get the money needed for the fuel and food necessary for a hunting or visiting trip, there was more preparation for it which may mean a great deal of traveling from house to house.\[40\]

Of course a lot of people were just plain busy. They were at work, or caring for kids; shopping for the food it takes to keep a big household going or waiting at the clinic.

For the kids and teenagers there was more. There was school after all. After school there might be sport on the oval, or music in the de facto music room .. if someone hadn’t been playing so loudly that the principal had banned it. There was always climbing on the school roof but that tended to be discouraged. There was the legitimate climbing equipment in the school grounds and of course the vast, freely accessible playground of the bush all around us. The school lawns were also a great place for a group to sit .. publicly (secretive behavior is always suspect) but yet privately enough. Roads were good for that too; there wasn’t enough traffic to have to move too often and they tended to be dry, even in the wet season. And they are a good place to greet people. There were always teenagers walking around the town with mobiles and MP3 players .. and each other. And there were those young men, walking the streets of an evening, whom I encouraged to come .. and yes, they would, but no they never did.

So it isn’t as though computers came into a vacuum. Yes, sometimes kids got bored but in general, in Ramingining, there is always something to do.

\[40\] Musharbash called this ‘hithering and thithering’ and showed how intrinsically important it is, in preparation for leaving a place. Musharbash (2006), ‘The journeys before the journey’.
What else? *How* else? How else were Yolngu living, in ways that would never leave traces in these sorts of metrological exercises? I recall Russell Hoban’s lions and his warning: If there is a lion around and you don’t have lion reception, you’ll miss it. 41 It is an important metaphor because it is so surprising. We aren’t surprised (any more) that space around us is saturated with radio, TV and mobile phone messages that we can tune into or not. Nor are we surprised that statistics miss so much. Statistics as intermediaries have become too common. We need to be surprised again.

*Njarritj*’s story started up the surprise in me. It was an answer to ‘how else?’ What else is happening there in Ramingining which might be so big, so bulky, that there isn’t all that much room for computers .. sometimes .. and when they are there, they take their place. They are always in a place.

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**Sunday 29 June 2008**

I write the words ‘*Njarritj* - downloading ceremonial paint photos - printing’ on my survey sheet. And so many times in the past I’ve been less specific. Just ‘photos’ and then the number of times got tallied. This many times we worked with photos. This much less than internet banking, more than email, etc. But so much is lost.

*Njarritj* is seventeen, an ex-student of mine. I remember him at twelve, staying back after class to tell me with pride that he was going to be ‘young manned’.

*Njarritj* coming to me this evening through the dusk. Anthea! Have you got camera? The suppressed urgency, the humming energy in the dark bodies of the friends with him, now painted so astonishingly, suddenly, intricately. Something usually only seen in other people’s photos in anthropology books .. and sometimes at the big ceremonies .. here now at my gate, ‘hanging around’ with so much portent. I get my camera. They line up, so relaxed in their pride; their mates taking turns to step in and out of the photos. I ask about the designs. Oops. I forgot. Men’s business. They are so casually, so definitively, so easily able to correct me. I take the photos and say, Tomorrow.

Monday. *Njarritj* comes while I’m working on my own computer in the van. Bulany, yet another ex-student, is on the computer in the tent so I say to join him; I’ll be ready soon.

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When it is time I invite him into the van to watch. He and I are both silently aware that this is unusual. I always tell the kids the van is my private space... unlike the area we share just outside my door (albeit not equally - they all know there are times I say ‘later’). But now I say, ‘Come in’. He is the embodiment of politeness, but also at ease. He finds a way to perch on a ledge given that there is only one chair. He watches as I go through the steps, talking him through the windows which appear on the computer screen. We experiment with my old printer. The results are pretty poor but we say what we can do next. The Knowledge Centre has a better computer and printer. I show him how I copy the pictures to a memory stick so we can put them on the Tablet computer out in the tent.

He picks up my scissors to trim the photos. He thinks through a choice I give him: two photos for free and the rest fifty cents each. He counts the photos and does a calculation... nods thoughtfully.

It’s all easy enough. We’ve been through negotiations like this before, and often enough over the years. Sometimes it’s been about ‘Rinsoap’, or the things which can just be borrowed like brooms, or consumed, like cups of tea... or asked for outright like help with filling out bank applications.

None of this shows in those brief entries in my survey sheets; this slow building up of a relationship... a feel for what can be asked for, what can be given, negotiated, denied... or how much is exchanged in those times when ‘things’ are put aside just briefly and something is said, something which traces, marks the shared memories and experiences. And nothing of that other world, just over there where the men’s ceremony is in progress. It seems it must be just ‘over there’... Njarritj and his mates just came from there on foot. But it is so far away I can never go there. And it will never get into a table of statistics. Nor will those tables count the lions.

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Good (and bad?) metrology

Just as ANT has always predicted, I have had to take the slow, back roads in order to do this work of retracing the metrological moves I had made in constructing my statistics in Ramingining. I now want to suggest why it was important.

By tracing these chains of links in the networks which constitute these numbers, I have located them. I have connected them to the places and people they purportedly represent. I have kept them linked to pieces of information which can’t get into the
Statistics which are highly refined, which have lost these messy connections, are highly mobile and can travel into all sorts of tight places, into boxes crafted for them in tables (on desks in offices in funding organizations in government departments in capital cities) with headings that say things like, ‘people using computers in 2009’. These column headings will never read, ‘people who might have used a computer if it had been in a place where they were in no danger of meeting someone with whom they are in an avoidance relationship’. Nor any number of other interesting permutations of potential headings.

But these refined numbers do work. They were always co-constitutions, busy making the realities they purported to be representing. They describe inequalities and some people/governments then work hard to rectify those inequalities. They devise funding schemes like the Backing Indigenous Ability scheme in 2007. These projects can potentially reduce the sorts of inequalities that end up in tables of refined numbers. But the information I have located by retracing the steps in making my own statistics, hint at what may well happen to computers, supplied in response to simple inequalities, if they have permanently lost their links to their origins. They may well end up in towns where there were few computers available to Yolngu, but they may remain inaccessible.

They may remain inaccessible because they have ended up in a place which is not accessible to everyone for powerful reasons to do with kinship. They may also remain inaccessible for any number of other reasons: because the numbers got separated from other influential actors in the networks which enable computer use, actors which are not even in the stories told here, to do with languages, training and literacy, or some which will be told in the next chapter, about locked doors and who holds the keys. The work of holding these messy networks together isn’t easy, but ANT has shown how some of it can be done. It involved being in place, maintaining relationships, recognizing the heterogeneity of the networks which assemble things and hold them in place, and recognizing that what we are all engaged in is heterogeneous engineering - an activity I have already claimed, in chapter four, to be
the basis of humility, hope and creativity. This chapter is adding a proviso to this hopefulness. It is saying that heterogeneous engineering is not an innocent activity per se. It is what we do. Whether we do well or not, whether the opportunity for creativity is taken up, is another question. It is the subject of chapter seven.

Before then chapter six will take up some more threads in these complex networks and ask why it is that some of them hold and others break. But meanwhile an Interlude will visit a number of sites in Ramingining, presenting a collection of the stories, interviews, images and reflections out of which this thesis was crafted; now actors in their own right.
Interlude 2 - A Database of Computer Encounters

**Item 1  Bulany’s Computer**

Today, the 9 November 2006, the school is donating a computer to Bulany, in recognition of the work he has put into learning about computers. It is an iMac and sports a sticker which reads, *To Bulany, Council Chairman, from Ramingining School*. The iMac is a colorful, bulky thing and a vehicle is needed to get it over to the Council. Anthea’s Landcruiser - overkill for the short journey - does it easily. Bulany is excited, hunting in his pocket for the key which will open the door. He has cleaned his office earlier today, to use the Tablet PC for internet banking. It seems a fitting welcome for the colorful iMac. The lead only just makes it from the desk to the powerpoint and Bulany seems reluctant to move the desk closer, so the computer accommodates by sitting at an angle.

Power surges into the iMac and it bursts into life, bright faced. Good, it has Microsoft Word amongst its programs . that will mean some continuity for Bulany who has been working with PCs. All the same he takes to the new Apple environment quickly and a little later responds to a suggestion to write the school a thank you note. He starts straight away. The screen already says, *Hi there*, where he has been practicing how to select text and change its size, and he goes to start the letter, *Hi there Corrie* .. but then he hesitates, saying aloud, *Hi Corrie*. The computer is prepared for such changes and together they take the ‘there’ out.

Some English spelling eludes him so he gets a pen and paper and asks for help. There are strange symbols like a reverse P indicating the start of new paragraphs and Anthea goes to tell Bulany to ignore them but then recalls they can be turned off. The new environment is challenging them both.

Someone arrives from the school with a printer. This time the desk has to be moved so the leads can reach another powerpoint. It is huge and heavy and it takes three people to push it. Bulany pulls the computer lead out of its powerpoint and the iMac shuts down. Bulany’s letter dissolves. There is too much new information going around to draw attention to it just then but when the iMac restarts there is the letter. The computer has saved it without prompting. But Anthea shows Bulany how to prompt it anyway. The printer has arrived without a lead and back at the school it continues to elude its pursuers. They can be purchased readily (well, via phone orders and money transfers and the post) and maybe there is one lurking in that box of bits at the Women’s Centre. The iMac sports several different shaped ports. At the school Anthea says that Bulany is ecstatic and the happy words bounce from person to person.

Back at the Council Bulany has completed the letter. Anthea reports on the search for the printer lead and they explore other programs in the iMac’s repertoire. In a games folder they find Nanosaurus and Bugdom. They are enticed in and soon Bulany has the bug going in circles and bumping into slugs. Neither of them know the aim of the game.

The iMac leads them through some steps to put aliases on the desktop and they are encouraged to explore. They find the escape key and the Apple Quit key. The paper and pen prompts Anthea to

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1   Sources: Fieldnotes and photos, Anthea Nicholls.
write down some notes for Bulany. A huge amount of new information is surging around but he seems undaunted and interested in everything.

The desktop also sports icons for phonics programs. They explore together. One of the programs has an early level activity which involves finding keys and pressing them to elicit the rest of a word. M will elicit man, F will find fox, T - toothbrush, etc. Anthea suggests it is too easy but Bulany gives her a quick, lovely smile and tells her, Hang on! I’m not there yet!

An urgent task calls Anthea away but Bulany seems happy and confident. He is quietly buoyant. And all so suddenly. But then it hasn’t been sudden at all. He has worked hard on the Tablet, ‘that little one’ as he calls it, and played a lot with the old library PC. He did the typing for the last Council meeting agenda. He has done so much more in his role as Chairman since the coming of the Tablet, and also of Amanda, the new CEO, with her open, respectful way of working here.

The next day Anthea has to go into Darwin for a month, on the trail of a caravan. When she returns the iMac has a sad look to its desktop face, with only a few icons scattered there. She searches in vain for the Word program, the phonics and the games. They have all gone. The only program remaining is a SimpleText word processor. An e-savvy friend delves further but he too finds no trace of these affordances. The iMac has been stripped of its capacity to take anyone on these encounters. It retains one more powerful agency: its Trash Can. It can still devour its own records and its own programs. This is what has happened. Kids have been here. They have had fun moving icons around on the screen. Little did they know that if they got too near the Trash Can it could swallow their games and fun, as well as Bulany’s ally in his pursuit of computer skills. Not only the programs have been wiped; further attempts to reinstall original disks also fail. Something vital in the computer’s own internal capacity to heal itself has been removed.

The iMac continued to sit on Bulany’s desk as a legacy, with something to say about what was possible. Occasionally a bored kid could be persuaded to play with the SimpleText program for a while, but by then the space itself had been translated into the Knowledge Centre and there were other computers nearby, which could play games and music and take photos and store videos .. and allow you to paint or color-in on line. The old iMac, despite its colorful jacket, just couldn’t compete and settled into its long retirement.

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**Item 3 An interview with Ronnie Barramala**

A: Where do you see a computer fitting into life in Ramingining?

RB: It’s the biggest jump from the bush to the city. Yolngu lifeŋur into Balanda worldlil. (From Yolngu life into/towards the Balanda world.) It reveals the whole book of life of dhukarr mala (pathways) to the Balanda way from Yolngu terms.

[Later he adds the word djolam (aiming at or for)]

A: Do you like the fact that computers are growing in number in Ramingining?

RB: I want it to grow ... in numbers in Yolngu hands: laptops, access to internet, banking.

A: Do you have a picture in your mind how that might happen?

RB: Once people come to train with you ... you are our gateway ... through this project. Training (leads to) rrupia (money) (so that people can) get their own.

A: What about you and your relationship with computers?

RB: I can go into ... mainstream ... and go into my internet. I have my own website number, internet information, (though) not yet email ... (I can get) information on my studies.
A: What about your computer training at the school?

RB: Still a blurr! (I want to) get it really clear and sit and (when it opens up) go bang!

We talk about BigPond, the Telstra internet server. I draw a diagram to show how it works. The tape runs out and we lose the rest of our conversation.

Item 4 Yolngu talk about computers

P: My computer is fading. I did number, literacy, modules 1, 2 and 3, but I’m losing it.

M: My brain and the computer are not connected yet.

Al: I’m not good with computers. It’s like making a spear. I’m marnggi for (know about) spears, woomera .. but not computers. You know computers.

G: There will be a hearing ceremony for my computer soon.

Item 5 The Tablet goes fishing at the Glyde River

Item 6 More talk about computers

A: If you met someone who didn’t know about computers and they asked you, What is a computer? What would you tell them?

Computer Workshop, Darwin, 21.11.06:

Dh: I haven’t (met anyone like that)!

A: Do you want to imagine? Just buuyun (making it up)?

Dh: People I know, my kids as well as the other kids, all know how to use computers. I guess the only people .. (But most people) especially the older people have a fair idea what a computer is. They would have been saying that back in the 1960s.

Ny: (A computer is) like a brain. It keeps your stories, and like history, bungul (ceremonies). If you are busy with anything and think of what you wrote before .. you go to the computer .. it gives you back your memory, what you wrote a long time ago. It’s reopened your mind.

W: This is the thing that helps us make our lives easier, instead of running around to get a pen, just start typing. (No) running down to the PO and posting it.

Dj: One of the things I’d tell them (is that it’s) a piece of equipment that has information there if you want to know about the whole world .. there at the tip (of your fingers). But you have to know your literacy and numeracy. If you are serious you have to go back to school. (It’s a) whole new world.

Y: It’s like a recording of information, documenting information. In the past we only used our brains .. I think this is where the computer comes from. It wasn’t written down .. it was here (in our brains.)
Item 6 More talk about computers, continued

Ramingining, October-November 2006

J: They are helpful to update your brain, but disadvantage your natural brain. A5-4, p140

M: It is an information holder .. not like an old typewriter. What you do is still there. It helps you get a job. A5-4, p141

D, D, A (three teenagers): (Silence!) Who, When, Where sheets, 21.10.06

D: For internet banking, transferring money, writing letters .. email, wages djäma (work). If I want to be a book-keeper .. It’s good for us. We are living in a computer world. A5-4, p153

T: Memorize TV. If you forget something and you know it is on the computer you can type it up. Army records - back five years. He was able to get information. (If you are) asking a question, Why is he learning? The answer is, Administration, (to be able to) type reports. (As they did in the army, and were able to send them straight away.) A5-5, p29

B: (B answers in Yolŋu Matha, listing its uses.) A5-5, p19

R: Today all Yolngu know what it is .. but don’t know how to use it. A5-5, p19

Yambal Durrurrnŋa, 11.11.06

Yambal and Anthea have been experimenting with a recording program on the Tablet computer. She asks the question she has asked others, about what they would tell someone who didn’t know about computers. Yambal still has the head phones on but the microphone is pulled back. Anthea asks if she can record, but he indicates he is not ready. He speaks in Yolŋu Matha for a while and then asks for clarification: Is she asking if people are asking why they are doing this work (their ongoing work of recording and writing stories and editing them together)? Anthea engages him in a role play, suggesting that he tells someone he is working with her, recording on a computer.

Yambal does this, speaking in Yolŋu Matha. Trying to maintain the role play Anthea asks, But what is a computer? She breaks out of the play to explain why she is asking this and adds: For me, this is a tool, like a shovel or a washing machine or a telephone. Yambal puts his hand on his belly .

Y: This machine will fill you ... It’s like my gun, when I go out and get animals, or a spear. This computer is marrkap’mirr (desirable) ... This computer is guŋga yunamirr (a helper). This computer is going with you, bämaramirr (your companion). Marrkap’thonamirr (bringing about something desirable).

He gives a look as though he is finished, but the look is half question, Is that OK?

As they finish for the day Anthea asks if she can give today’s earlier recording to their co-worker, John, at the university, who is making a CD of their work. Yambal replies that he should make two copies, one for her and one for himself.

She asks if the university can show it to dharrwa (many) people? He tells her they can listen to the story, but then he reiterates that the copies of the CD should be limited to John, herself and his family. He explains this:

Y: It (the story) is like .. family. A5-5, p34-36

A (reflecting): I begin to think there is a clue here as to why people often deferred when I tried to engage them in hypothetical conversations re computers. No conversation is hypothetical in Yolŋu terms. Everyone belongs somewhere in the kinship system and one doesn’t speak in the same way to everyone. You need to know who you are speaking with, to be able to speak appropriately .. to know how you might speak.
Item 8  An observation, 14 June 2007

Anthea: We do a lot of work beside (alongside) computers here!

A5-9, p44

Item 9  Yambal Durrurrnga at the iNet cafe

Item 10  Peter’s laptop and NextG account

PM is a talented musician. He is also a vital member of the local incorporated body, Yuyuŋ Nyanaŋ. In February 2007 he brings his laptop, purchased with Yuyuŋ Nyanaŋ funds, to the iNet café, where it picks up the satellite signal. Anthea helps him to register for internet banking and to order a NextG internet account. Soon after this he tragically dies. In April, Chas, a Balanda employee of Yuyuŋ Nyanaŋ who has been involved in recording music with PM, talks about his commitment to both his music and his laptop.

When Chas had arrived in Ramingining, PM’s family had an old computer which resisted Chas’s attempts to fix it. The whole time PM was hassling for a laptop. He offered a deal. He’d teach Chas how to do ‘this’ (playing a guitar) and Chas would teach him ‘this’ (typing on a computer). He was aware of email, internet banking and various music/note taking uses before he got his own laptop, which happened in January. Straight away he was using it for multimedia stuff. He had a memory stick and he’d copy music files and photos of his kids from Chas’s computer.

He proved himself responsible with equipment; he was adamant that it wasn’t a toy his kids could play with. But there were a few rescue calls. Once his daughter had been sitting on his lap, typing, and flipped the screen and track pad. Another time he’d called to say, ‘You won’t believe what’s happened. All these rude things came up (on the computer)!’

At first he used it for photos and was always changing his backdrop with photos of his family. He would listen to music while watching a slide show, something Anthea taught him. Occasionally he’d borrow a CD from Chas, but he mainly used it for taking notes and writing. He wrote songs and other collections of thoughts.

When Chas would go to his place for recording sessions they would have to set up a table so PM could have the laptop at eye level, like an auto queue, but set so he could always see the band. They always needed an extension cord as there was only one power point for everything, including the amplifiers. He would use the laptop to keep track of his lyrics and added stuff, just as if he had a notebook.

He wrote there too, about other things. About a daughter who had passed away, about the
community and its needs. He took great pride in the fact that on a day when the phones were down in the town, he was still able to transfer money though his internet account. He was avid for new information and would come to Chas with English words. What does it mean? Liability vs asset? He was always looking for more. Always trying to expand his knowledge. At the same time willing to offer his knowledge of the Yolngu world to Balanda.

When he died the town went wild with grief.

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**Item 11  A Ramingining Survival Kit**

.. plus a small booklet which is used to record iTunes purchases at the iNet café.

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**Item 12  Old traces**

Google takes us to pictures of children swimming in the sea off Milingimbi in the 1930s. Y recognizes the very tree he and his wife jumped from, into the water, when they were children.

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**Item 13  Naomie and Nelly hunt for their names in the lists of computer users**

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**Item 14  The explorations of new users**

1 November 2006
Turning off the computer in the open space at the old Council building and finding huge numbers of open windows piled on top each other, the traces of exploration. Desk top icons and task bar have gone. Have to use Ctl-Alt-Del to log off.

15 June 2007
V is learning to use the Corel Painter software. She quickly finds out she can use the keypad controls or the pen and she mixes her use. She grabs bits of her picture to erase. She turns the Tablet on its side as she writes, imitating how she works on a piece of paper .. then reverts back to a horizontal position. She discovers she can cover her screen with a color by using ‘fill’ on all the shapes. When shown that she can write on the color with a white chalk she experiments and finds she can color the white strokes with ‘fill’. Quickly she picks up how to undo a move. She experiments with how hard to press and the relationship between the pen and the cursor. She tries positioning the cursor with her finger, thinking it will set the pen at that point. When she finds that it doesn’t, she quickly adjusts.
Item 15  The computer keeps track of kava sales

4 August 2007
A5-11, p87

Item 17  The polite computer

Helen G........ is doing her internet banking.

Computer: Good afternoon Mrs Helen G........

HG: Last time it said: Good Morning. Amazing!

A5-8, p50-51

Item 16  Computers and moiety

Question: Where does the computer belong in the Yirritja/Dhuwa Yolngu world/universe?
September-November 2007

Br: Yaka marngi (I don’t know) Bâynu (neither) ... just computer. (It’s not like) nature .. (where) we have to sort out which is which.

A5-15, p109

D: Bâynu (neither).
D goes on to tell about trees, birds .. and keeps adding to the list of things which are Dhuwa and Yirritja. Later she calls across the room to say she forgot to add languages. Anthea asks, What about cars? D says they are like computers, with no moiety .. but sometimes people do give them names, and houses too.

A5-15, p108

Y: Both, Dhuwa and Yirritja. Both universe is a place where people can come together and learn .. us people of this universe. [Later] Is that the answer you are looking for?
A: Do you find it hard that some aspects of the Balanda world don’t seem to fit into Dhuwa and Yirritja?
Y: That Balanda world should come into Dhuwa and Yirritja. We should come together, play together, talk together. We’re friends. Say what is hidden in your heart. The world story.

A5-13, p73

Item 16  continued ..
Ronnie Barramala is with other Yolngu teacher trainees at the school, 17.9.07. He suggests asking ‘that question’. He clarifies it in Yolŋa Matha and English for the others and says, I know the answer but we can think about it. To Anthea he says, We’ll think about it. M comes by.

M: What a weird question!
A: Think about it!

Ronnie takes Anthea aside and says, I’ll just tell you my answer.

R: If I am Dhuwa and I sit myself in the chair and I want information from that computer, it becomes yarra (I, myself). [His hand movements imply a relationship between himself and the computer.] It becomes Dhuwa. Same for a Yirritja person .. or a Balanda .. or an Outerspacepuy (someone from outerspace). But we can use Balanda matha (language) to communicate.

M joins us.

M: It’s a weird question.
R: A weird question!
M: I’ll think about it.

Ronnie seems excited. As Anthea goes he calls to her: Write it down! How you present yourself to the computer.
Later, at the preschool one of the Yolngu teacher trainees whom R had engaged in the question, asks, Is that going on the internet?

Anthea gives a version of her usual reply: I am writing that story, about how the computer lives here in Ramingining. I might put some of that story on the internet. She adds that she is interested in that question. It is like that computer came from outerspace. (Ronnie has given her this idea.) Where did it land? Is it Dhuwa, Yirritja, both? Both, the trainee replies.

A (reflecting): People seem puzzled by this question. Why am I asking this? Y had asked, Is that the answer you are looking for? They look for connections. One teacher trainee asked if it was to do with Yolngu fonts. Another now asks if this is to do with the internet. When I give them options, they say, bāyyu (neither) or both.

The next day she sees Ronnie and tells him she has listened to their taped interview.

A: You can hear we were quite excited about that idea, of the computer taking on the person ..
R: The personality. That computer is prepared for that person .. a mastermind.

Asking the question, she soon meets this idea again,

G: Yaka ɲarra marŋi. (I don’t know.)
A: Dhuwa, Yirritja, both, neither .. ?
G: Both. Computer, books .. both Yirritja and Dhuwa. If you want to do some Dhuwa dhāwu (story) it will go to Dhuwa dhāwu on the computer. Same with Yirritja.
A: Are there things outside of Dhuwa and Yirritja?
G: Warrpum (everything).

Later (3.10.07) D also tells her that the computer is both Dhuwa and Yirritja. It is like Yothu Yindi, he says and takes her note book and draws a child inside a woman inside a map of Australia. He writes the words for the Yothu Yindi relationship in several languages for her.

But several people also tell her that computers do belong to one of the moieties. They say it isn’t their story to tell and she mustn’t even tell it anonymously.

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Item 18  Cards at the Glyde River

Item 19  Bubbles in the iNet cafe
**Item 20  Ronnie and Jane’s computer**

Ronnie Barramala and Jane Miyatatawuy are students enrolled in a college in Queensland. The college has facilitated their purchase of a recycled ‘Green Computer’. It was bought with dividends from the local store.

It commandeers a small table in a room where there is just room for a chair between the table and a mattress.

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**Item 21  Ronnie and Jane using their Green PC**

Today Ronnie and Jane need to print out work for a college assignment but many actors come on stage to keep us moving around the town.

A5-8, p64

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**Item 22  Busy actors ..**

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**Item 23  .. with the power to undo networks**
**Item 24 Wămut comes to the iNet café for computer training**

Wămut has been to the training course run by the IT trainers at the RHRC in October. On the 15 October he starts daily training at the iNet café. He comes twenty-two days over the seven weeks left before Anthea leaves. He is so keen he often arrives at eight o’clock. They recruit the partner of a teacher to come and work with them, to be mentor to Wămut while Anthea is elsewhere.

Wămut has come to computers from an apprenticeship in mechanics, so now he and Anthea often resort to analogies when struggling with ideas: the control panel on the computer, the control room at the power station, under the bonnet of a car. Cars prove great metaphors too for understanding the way computers change with respect to makes and models.

As Wămut grows in confidence he starts helping to document the lyrics for musicians now working over at the Knowledge Centre. He tells Anthea about his misgivings, writing lyrics for his poison cousin. (Chapter 5, p170)

A5-15, p6

They work on the Tablet computer in the tent but also on the old PC laptop which they have borrowed from the Knowledge Centre. Wămut practices using the program Excel on both machines and then takes the PC home over night.

A5-15, p4

In the iNet café he encounters and immerses himself in Google Earth and iTunes, he signs up for internet banking, starts to use email. And relaxes with Bubbles.

2 November, 5.00 pm

Wămut arrives at the iNet café with his wife. They have a problem with the computer, they say. How do you turn it off?

A: The start menu .. ‘shut down’.

W: But it showed me nothing on the screen. Just white writing.

A: I remember. It’s an old computer. It does that sometimes. Just hold down the start button.

W: The red one in the middle .. ? What happens if I pull out the cord?

A: You can, but if it stays on, the battery will run out.

Wămut asks again, and A says it’s not a good idea, but then he asks, What if? And admits he has done it.

A: It is still on?

W: Yes.

A: Plug it in and try holding the button down .. count to five. If it doesn’t work leave it plugged in and I’ll come around when I take my dog for a walk. It’s not a yindi (big) problem. It’s an old computer .. like old people .. it gets tired!

They smile, backing out.

Wămut often wants their lessons to be documented, so together they create a record in an A4 exercise book. Diagrams grow as they struggle with the concepts which litter computer talk, like upload/download, digital (with its off-on-off/off language), and pixels. There is a binocular microscope at hand so they study the colored dots making up pictures in a magazine.

**Item 25 Wămut practising in the iNet café**
The book grows. At the IT training sessions words like ‘browsers’ and ‘search engines’ had been thrown around too freely. Here they proceed word by word. Write it down, ŋama (mum)! becomes a mantra. By 16 November Wämut is writing his own sequences for changing the appearance on the desktop and for downloading photos. They now talk about this being a book they can write together for other Yolngu.

While talking about updating, Wämut picks up on the expression, ‘one week old’.

W: Computer?
A: No, the program.
W: Am I humbugging you?
A: No, this is not humbug!

Then they create a joke: eHumbug! They had been talking about how people make short words like iNet, iMac, eMail around computers. On another day when they are talking about what is needed to buy and maintain a computer (a daunting list) they come up with a formula for getting there: eHumbug and eBämaras.

This day they have talked about accounts and studied one of the recent Telstra bills for the satelite. When they are in iTunes they check out the size of the songs and talk about the way they are bought out of a pre-paid account. The 4-5MB songs cost $1.69 and this is what the kids write in the little stapled book which is always left by the Tablet (and are supposed to pay later!). Wämut sees that this amount doesn’t include the time paid to Telstra for the download and asks, So if I buy an album .. how much should I pay? To be fair.

His thoroughness forces Anthea to consult the account and find that it costs 14c per MB and do the calculation: .14 x 4,5 = .63c

On 10 November Anthea relaxes in the evening, playing a computer game, but the Tablet announces it is going into hibernation. The battery has run too low. When she tries to restart the computer it makes an ominous suggestion: ‘F8 for PC recovery’. A whole new program emerges from hidden recesses, offering an array of pathways. ‘Recover and Backup’ seems the safest option and sure enough it proceeds to do just that. But when it reemerges, in working order, it is as though it has had a personality change: No Microsoft Word, iTunes or Bubbles. Google Earth is no longer installed. The desktop is unfamiliar. The satellite connection only needs one prompt to resume, but now there is only one login, the Administrator.

Wämut and Anthea add crashes to their conversations. The computer clock is now wrong so she goes into the control panel to show Wämut how it is set, but follows a detour and gets lost. When she returns to the clock she has confused Wämut. He consults his notes and says he thought they chose ‘Appearance’ and then got these choices. He is thinking about levels. They work through it, discussing ‘appearance’ in English and Yolŋu Matha. Soon Wämut decides to listen to music and postpone more learning till the afternoon. He goes to show a friend some photos but those folders too show changes since the crash.

Wämut: You’ve got me worried!

Anthea sees Wämut at the computer hurriedly looking through his notes but resists going over until she sees him concentrating on the screen. He has opened Google Earth and is panning in on Ramingining. They all watch. I’m flying! says Wämut. He takes them north towards Yathalamara, and its great billabong. Anthea sees another stretch of water she didn’t know was there and comments on it. Wämut: That’s where we have men’s ceremony.

He pans away from it.

In the last week of November, one of the IT trainers returns for three days to work with Wämut. They work in the iNet café while Anthea packs up for the transition back to Darwin. Phil joins them and he and Wämut begin to explore a new relationship. It is a difficult goodbye for Anthea and Wämut. They talk about when she will come back.
Item 26  The Tablet and Rosella jam

Selena and Sharon with jam grown and made at the caravan, on an open fire. Selena has designed the label on the Tablet computer.

Item 27  Please, if you love me!

7 August 2007    D, J and A (teenage girls) arrive at the caravan like a small flock of birds. They want the Tablet. D is holding out her arms.

D: Please, if you love me!
A: It's not here.
D: Go and get it..
A: No, I have to leave in fifteen minutes.

A5-11, p93

Item 28  Mobile fire-flies

23 July 2007, 5.00 pm
Outside the caravan a small child (about six years old) is standing studying an open mobile. She closes it and walks on. Her face very adult.

Later, at dusk, lots of people on the road, out from the basketball court. Small groups and individuals. Several look as if they are smoking .. but it’s the small lighted screens of their mobile phones.

A5-14, p66-67

Item 29  Dorita using the Tablet to document plant names

Item 30  Narritj uses computers to pursue his music

5 August 2007  Narritj comes to the iNet café and he and Anthea play with the old PC which has come from the school .. but there are no built in speakers for sound. Narritj resorts to iTunes on the Tablet while Anthea makes cups of tea.

She brings out a book about a bushfire in Victoria in 2006 and puts on the CD of music sung by a community choir, inspired by the experience of the fire.

Nj: Anthea, have you got a printer? I have to write a song .. about fire.
A: For the band? Yow’. I can take it in the van and print.
Nj: You help me. First English, then Aboriginal.

She points to the word processor icon on the screen and when it opens prompts him to set the screen to 75% .. comfortable for writing.
A: You have a go and then call me. I’ll help you organize it and get the English.

Ŋarritj gets the fire book. Soon he calls for help with his spelling. He explains his song. He is sitting when someone tells him there is a big fire, but he thinks it is far away. Then they tell him it is closer. What will they do?

He has to work hard to get this out in English but he’s at home with the music. He swaps in and out of the word processor and iTunes, going to specific parts of a Lucky Dube song. He reads his lines to the music .. his hand keeping time gently.

Ŋarritj has discovered the recording program GarageBand on the iMacs in the Knowledge Centre. He has experimented with singing short tracks. He wants to record one of his songs, sung by his band. He asks Anthea about taking the iMac to his house where the band is practicing, but she suggests they use the Audacity program on the Tablet instead.

15 August 2007
Ŋarritj reminds Anthea about the recording at Red House. She says she’ll bring the camera and he reminds her: It’s the video they want. And the Tablet!

Soon there is a small recording studio in Red House. Main room cleared. Mattresses against the walls. A sheet as backdrop .. ingeniously held against one wall. A keyboard (private, belonging to one of the band members) and amplifiers (belonging to Ŋarritj). There is a CD player without a lid, its working parts exposed like everything else here.

Ŋarritj bends over the Tablet on the floor. The Audacity recording program is picking up the music. A teenage girl films with the video camera. Another has the stills camera. Band members hover and attend to this and that. There is a problem with the light. One band member is on vocals, joined by Ŋarritj. He emerges as director, singer and producer. He has the stance and smile perfected for the camera. It is all under control.

Item 31  Using email to buy a used car

23 August 2007
P comes with his wife and child to the Knowledge Centre. He wants to see a photo of a car he is thinking of buying. He gets A to phone the dealer and email a photo. They use webmail on the old laptop. It is painfully slow.

P says they should have asked for long and cross(ways) .. and then suggests it is too late now. He comes back later and asks for pictures of more cars. They all go the iNet café and use the satellite connection, and print out the photos.

Item 32  Kids on the PC in the iNet café

See video in Appendix 5.
**Item 33  Inscrutability**

21 October 2007

Anthea is on her bed under the air conditioner, feeling sorry for herself. She has recently put her head in the path of a fan and it is now stapled. She hears the kids next door on an improvised drum kit and it redeems her mood. She gets up and reaches for the video camera. Will she? Won’t she? These kids have participated in many video segments but she is aware that this time she would love to capture this artless play without any acting up to the camera. She takes a short segment, standing behind a screen at the van.

Someone rides up for a neighborly exchange; fresh baked bread for tomatoes from her garden. She starts to bring in the washing and one of the kids comes over.

**J:**  What you doing?

**A:**  Taking in my washing.

He is quiet for a moment, then again: What you doing?

A puzzles over this, till he says:  What you doing?  Camera.

She is stunned. There was not the slightest sign at the time that he had seen her. She gives him the camera and starts it for him, to go and take more footage.

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**Item 34  The IT workshop**

21 August 2007

P is at the IT workshop being run at the Resource Centre. He has studied computer when he was in prison. His teacher there told him the computer is like a person, talking to you. P comments that his memory is coming back. Good, that is what he wanted.

J has to work hard to get hand-eye co-ordination. His hands are large, rough and calloused. Sometimes he holds the mouse with his right hand and clicks with his left. After a while he tires of the card game he is using to get the hang of the mouse. A introduces him to word processing: typing words, selecting them and changing their format. He types his kids’ names and quickly picks up the idea. He asks for (the Yolngu letter) ‘ŋ’.

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**Item 35  Computer fossils in the old Library and Council buildings**

A5-14, p59-60

A5-12, p72

A5-12, p74
Item 36 Mobilephone djäma (business)

29 June 2008

J arrives at the iNet café with her young daughter and a mobile phone with earphone lead. There is something wrong. Perhaps Anthea can fix it? She says she has bought one song. It cost $2.99. Now it isn’t working .. though everything else is OK: phone, in and out, messages. She thumbs through the menu .. looking for the message she has saved from Telstra. She says she has already spoken with them and been told she can go to Telstra.configure.com.au and use a number they gave her, which she has saved on her mobile. All this she relates.

A: I’m not marngi mobilephonesgu! (I don’t know much about mobile phones.)

But she starts to brainstorm some options. Who is marngi mobilephonegu in Ramingining? Does J still have the manual? She can bring it later and they will also try ‘help’ on the internet.

A (reflecting): She knows far more than I do already. Mobiles will be the future for Yolngu when it comes to the internet. They skirt all the problems of private ownership and access to large expensive computers.

A5-16, p57-58
Chapter 6 - Strong and weak ties

Success and failure were powerful notions in my work with Yolngu and computers in Ramingining. They are the subject of this chapter. I will now look at a number of operating networks in Ramingining in order to ask why it was they endured for a time. I will also watch some networks falling apart and ask the same question. In doing so I will take up two answers to this question which have been proposed within ANT discourses and ‘try them out’ for their usefulness here in Ramingining.

The first is Law’s suggestion, already met in chapter three, that it is in the architecture of networks that stability resides and that this concept can be understood in terms of the materiality, the strategies and discourses which constitute networks. I will use this triad to examine two ‘found’ networks in Ramingining: the computer laboratory and the playgroup at the Early Childhood Learning Centre, both part of the local school, Ramingining Community Education Centre.

I will then turn to Latour’s suggestion, summarized above, that the architecture of networks can be examined at the point of its links. He suggests that we will find strong and weak links and that strength can be found in the number of links which work together; and ultimately in the cost of undoing links. I will apply this idea to a series of stories which tell what happened to the Knowledge Centre and iNet café in 2008, the year after I left Ramingining.

As always, in this process, we will get the chance to see something more about the way the computer lived in Ramingining and the networks with which it is enmeshed. In following Glen and Daisy for a while, in chapter three, we watched the computer at work in its enrollment by banks and money and the way it enrolled us to behave in certain ways in order to be part of those networks. In chapter four we saw how it
needed a place in order to exist here and how it enrolled me in the heterogeneous engineering business of assembling a place, and how that place turned out to be multiple and fluid (or rather ‘fiery’) in ways ANT has also taught us to see; that is, to not be surprised that objects may exist across ontological categories. In chapter five we watched more ontological work in the translation processes by which our computers in Ramingining became numbers in tables, but we also saw that this particular act of metrological engineering could be done in ways that maintained at least some of the links with the heterogeneous networks in which these numbers were crafted, enhancing the work they are able to do. And now, in this chapter, we will examine some of those networks for what it was that held them in place or allowed them to fall apart.

In this account we will meet some new actors, needing an introduction. In June 2007 the Federal Government responded to a commissioned report into the protection of children in Indigenous communities. In haste, in an election year, it assembled a raft of interventional measures unprecedented since the earlier policies of removing children from their families, sending waves of confusion (mixtures of relief, dismay and apprehension) through the communities involved. The measures included removing the permit system which restricted free access by white people to these areas, the taking over of land rights to towns, and mandating the control of fifty percent of all social security income. But computers were also implicated in the protection of children, in that they can be used to access pornography, and so the legislation included mandatory surveillance of all computers funded by government. As this chapter will reveal, these new players became active participants in the social life of our computers in Ramingining. We will meet them in due course. Meanwhile, at the time this chapter begins, the networks we have labored to assemble have settled into a state of continuity, and we are about to visit one of them in the first story.

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1 This expression recalls Law and Singleton, who suggest that it may be ‘a defining characteristic of an object that it subsists in several forms and that it flows (or discontinuously jumps) between them.’ Law and Singleton (2005), ‘Object Lessons’, p347-8. Also Law, ‘proposing that objects are topologically multiple, existing as intersections or interferences between different spaces including regions, networks, and fluids.’ Law (2002), ‘Objects and spaces’, p102.

2 NTNER (2007), 'Northern Territory National Emergency Response Act'.
Story 1: Manuel is enrolled in the network

5 July 2008, 5.30 pm

Just outside Blue House someone greets me. Anthea! You busy?

It is one of the yawirriny’, the young men. I don’t recognize him as one of my former students though he is the right age. I tell him, Yes, I’m just going to water a garden. Do you want the computer? Yow’, he says. He agrees to come tomorrow. I am always happy when someone wants to use the computer, especially when someone new has heard about it and ventures out to touch the edges of its network in this way.

6 July 2008, 11.00 am

He hails me with that short, sharp call, Anthea! I call back from my computer, Just a minute! He comes in through the gate and sits down at the table while I quickly finish a task. When I go out I take the Tablet computer. I take it into the tent and plug it into the leads we always leave there on the table, connected to a power board which also feeds the upright fan. I ask, Have you used this computer before? He shakes his head as he joins me.

When the screen bursts into life I point to the icons on the screen, and start to say they are programs. But then I think to ask, Have you used other computers before? Again he shakes his head.

Anthea: Who told you about the computer?

Young man: Wamuttjan. She’s my sister.

Wamuttjan has been here transferring music from her CDs to her iPOD. She has finished year twelve multi-media studies at the school. If Wamuttjan is his sister, he is Wämut, one of my waku, my classificatory children. Yet another Wämut in my stories. Wämut, Wamuttjan, Njarritj, Njarritjan: children and grandchildren. They are easy relationships and they frequent these stories.

I am always a bit embarrassed to ask the names of people who obviously know my name, but I ask, Yol nhe yäku Balanday? (What is your Balanda name?) I’m cheating a bit, as though I know at least one of his Yolngu names. He tells me his name is Manuel, and I remember 2001 when he was briefly in my class.

The intrigue of the touch screen on the Tablet and the game of Solitaire make good starting places for us, even though he isn’t familiar with the game and has to experiment. He does so tentatively. I realize he may be shy and waiting for me to prompt him. I feel shy too.
Bubbles, the recent obsession of the kids who frequent the iNet café, proves to be another friendly computer bämara. Again it takes him a few moves to get the hang of it but the game of pool is his best teacher. The screen presents him with an array of colored balls which can be eliminated in strings of the same color (with satisfying sound effects) if the player uses the principles of pool to fire at them. It is a game for a solitary player but it seems to conjure up enough company to engage even these kids who so seldom do things alone.

After a while I click on the iTunes icon. Our iTunes library opens with promise. I ask if it is an iPod or MP3 player that he is carrying. It’s an MP3 player. Bugger. I’m still unsure about MP3 players .. unless folks bring their own CDs and then it’s easy. (I can feel myself being enlisted by the computer here, to become one of the links in its chain of relationships with the MP3 music industry. I make the move with some trepidation.)

The kids have already bought dozens of songs using iTunes cards and after much agonizing and attempts to explain about copyright obligations I now let those with iPods ‘share’ this music. (In this case I resist being enlisted in the strategies set up by the music industry, because I see that we can’t fit the description of the ‘individual’ that is inscribed there.) And of course now the kids listen to this music endlessly. But we have very little music in our MP3 library and I’m still an amateur when it comes to prompting these parts of a computer to talk to each other. Fortunately we do have some MP3 versions of music by our local bands .. with no copyright problems.

But then I see that Manuel hasn’t got a USB lead for his player. I tell him, You need a lead. A young woman from next door has joined us by then and he asks her in Yolŋu Matha about that. She brings one over, after Manuel has left, and asks me to keep it for him.

Meanwhile he listens to the iTunes music and plays the few DJ Bobo videos we have bought. I have recently deleted several from other musicians because the clips were full of images of cleavage and of thighs being caressed. The former is nothing special around here but thighs are considered strictly private. (So there are things I allow and others I prevent in my engineering.) An old desktop computer in the tent used to divert the little kids from the Tablet and these videos, but since it died much younger kids are now playing on the Tablet. And besides, the Intervention legislation has made us nervous.

With the iTunes icon on the task bar he plays Bubbles while he listens to music and I leave him to come back into the van to write here. Soon I hear my name. He wants to know how to change the music. I show him how to make a playlist with his own name. I sense a rising engagement; a strengthening link. Back here in the van I can hear him dipping in and out of songs. It hasn’t taken long to get the hang of it.
This story fits neatly into the story in chapter two (the day the IT trainers were here) and into the account of Ramingining in Interlude One. In all these accounts many things are hanging together. What is happening may well have happened the day before and probably will again tomorrow. As I write here, now, Ńurrritj from next door comes by. I hand him the Tablet out the door, and he plugs it into the leads in the tent himself. Soon I hear the familiar sounds. It is all working. And if we do as Latour suggests when things are working, if we look for the progressive extension of a network, it is all there to be found. If we follow the actors we will find them all playing their parts, consistently.

When we take the Tablet out of the caravan (where it shelters overnight) and plug it into the leads in the tent, we plug it into a classic network: Telstra and the World Wide Web. But it’s not just in this classic sense, but also in the sense ANT has made visible. The satellite only functions because it sits at a precise angle on the tin roof of the shelter which is anchored by its legs (albeit here and there bent) to the land. The land has been ‘lent’ by the people next door, the land owners and the incorporated body, Yuyuy Nyanaŋ to which they also belong. As a safeguard they have taken out a Land Use Agreement over this bit, and several other blocks, of (their own) land; a safeguard against the wholesale annexation of town land by Balanda entities such as Councils and Shires and Governments. The block of land is supplied with electricity and water. That is how the caravan continues to shelter the computer at night; because the water and electricity work together with the van’s particular shape and affordances to shelter me .. and the fridge where I keep food. Each day it is the same, so long as I keep the power box supplied with the power cards I purchase from the Women’s Centre, and a device in the box reads a code on the card which translates the amount of money I left at the Women’s Centre into an amount of electricity.

And then there is the chain of connections which enabled Manuel to call out to me as I walked by in the dusk that evening, and enabled him to come to the caravan. These relationships are ‘given’ but also daily held in place, by the messages in cups of
coffee, firesides, greetings, shared outings in a vehicle, the gathering of firewood ..
the performance of those relationships. Manuel, it turns out, is a son to someone who calls me yapa (sister). Manuel calls me yama, (mother). We both felt shy but it was all OK. It was all easy.

These chains of actors and translations could be ‘prodigiously extended’ in every direction. But the question to be asked here, is not, Who/what did what to what/who next? But, in what does all this stability, all this continuity, adhere?

The question of durability

ANT loves to ask this question, or rather, it often frames questions in this way, in order to retain its agnosticism. In chapter one I have already quoted Callon answering it one way in 1986:

An actor-network is a network of simplified entities which in turn are other networks.

The solidity of the whole results from an architecture in which every point is at the intersection of two networks: one that it simplifies and another which simplifies it.

The satellite dish represents a whole network of hardware, people, policies, and bills; it represents that world as an entity, at least it does today. Almost forgotten is the day the technician sat outside under the shelter surrounded by curiously shaped pieces of metal and bolts and his knowledge of what to do with them. Almost forgotten too are the hours of frustrating phone calls and the translations here on this screen to change a number so that two addresses could distinguish the modem from the wireless for the confused computer. Today it represents one functioning network. A black box. An intermediary.

It can be translated into other actor-worlds. ... Although simplified into a point and displaced ... it is still composed of associated entities. While these entities are susceptible to being molded or shaped, they in turn may transform the actor-world of which they form a part.

And so it does, transform our world. As one entity now, nested into the network of the iNet café in the tent, we here at the tent become another functioning whole, connected to the internet and so much else. And it is all working because of this

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3 The expression is Latour’s. Latour (2007), ‘Can we have our materialism back please?’, p140.
5 ibid., emphasis mine.
6 ibid.
nesting, this architecture, and because none of the links has been broken. Alas we will come to that day soon! But Law also has something to say about this continuity and he also uses the word ‘architecture’ as the key to this endurance, or stability in a network, but he has more to say about it.

Durability: in architecture

Law suggests that this architecture is at work in three ways: that it is material, strategic and discursive.7

- It is material, he says, but clarifies that he is still talking about architecture, the way things are arranged, because ‘in the end it is the configuration of the web that produces durability. Stability does not inhere in materials themselves.’8 Certainly when we think of the inside of a computer, we are familiar with this understanding, but of course ANT extends this notion of architecture beyond (what I would call) ‘easy materiality’ to all the configurations - the relationships between all of the materialities in the networks - which constitute a computer, including the places which enabled it to work, the people who had appropriate relationships with keys and documents and signatures, and so on. In chapter four we saw what happened when such configurations got muddled. Doors didn’t open and dust and computers and people remained in odd relationships.

- Law goes on: the configurations which confer stability are also strategic, that is, they may well be ‘deliberate strategies to create a durable network.’9 Law draws on his own study of the Portuguese mariners to illustrate this point.10 The Portuguese ship builders had experimented over a long time with novel designs for exploration and exploitation. It was a matter of Royal policy that they invented a system of celestial navigation. They exploited networks stabilized by other strategies, by translating them into their own: including the art of growing spices. Here were ‘deliberate strategies to create a durable network’ with specific outcomes in mind. Law also uses this story to say that these examples of human strategizing don’t

8 ibid., p148. As so often in ANT articles and critiques of ANT, Law makes this point in reference to studies of prison walls and ‘sleeping policemen’ (speed bumps). See Callon and Latour (1992), 'Don’t Throw the Baby Out with the Bath School!'
10 Law (1987), 'Technology and Heterogeneous Engineering'.
exhaust strategic possibilities. An actor network conception of strategy includes in it the notion of ‘teleologically ordered patterns of relations indifferent to human intentions,’ such as tides and winds.\(^{11}\) Or in Ramingining, as we have seen, the seasonal activities of termites and thunderstorms.

- But the architecture which confers durability doesn’t just inhere through material and strategic arrangements. It may also be inherent in discursive modes of ordering as in Foucault’s mini-discourses, which ‘define conditions of possibility, making some ways of ordering webs of relations easier and others difficult or impossible.’ Law is drawing here on his own management studies\(^{12}\) and it was in the context of management issues, when the NT Intervention was announced, that I began to see much more clearly, how discourses sustained as well as disrupted our networks at Ramingining; how stories ‘arrange’ things for us, and indeed, make some things look easy, inevitable, justifiable, and others not. But I will come to that.

This triad of ways architecture ‘works’ is proposed as an account of durability and Law makes this proposal in answer to his own question: If we (taking the tenets of ANT seriously) are not going to resort to the foundational dualisms of nature/culture, technology/society, etc to account for durability, then what does account for it? Are we forever bound (in this stance) to the study of the performed nature of phenomena, as they are manifest here and now?\(^{13}\) No, he suggests. There are patterns. Things do endure, and they do it because of the particularities of their ‘architecture’.

Note that this talk of architecture (and its connotations of stable relations) happens alongside two other important discourses in ANT, which I have already used in this thesis. It does not undo the recognition that networks only endure, maintain their shape, because they are performed by their parts.\(^{14}\) And it does not demand some sort of hegemony for network models which depend on stable internal (network-like) relations. Already in chapter four I have explored ANT’s fascination with stable objects that do not display stable relations between their parts and share

\(^{11}\) Law (2008a), 'ANT and Material Semiotics', p148.
\(^{12}\) ibid., p149. The work referenced is Law (1994), Organizing Modernity.
\(^{13}\) Law (2008a), 'ANT and Material Semiotics', p148.
characteristics with fluids and fires. Such objects may even endure because;\textsuperscript{15} because change is an affordance of that particular object. This potential for change may reside in the flexibility of a particular set of discourses, strategies and materialities (as with the Zimbabwe Bush Pump) or it may reside in the mutually generative but othering qualities of the discourses, strategies and material arrangements of, for example, such enduring anomalies as the diseases that organize treatment around themselves in public hospitals.\textsuperscript{16}

But given Law’s proposal, I wanted to test its usefulness in Ramingining. Here was a place where issues of durability and change - of things which stayed the same despite phenomenal pressures and of things which fell apart despite phenomenal work – was never far from our concerns and our talk, and was of course at the heart of my role as an intervener. The possibility of new ways to understand was, as always, seductive. I would eventually use the proposal (in chapter seven) to think about the durability of the place for a Yolngu computer which I had helped to assemble, but I chose to begin by considering two other temporarily stable assemblages I found in Ramingining: the computer lab at the school and the playgroup at the Early Childhood Learning Centre. I did this because, as I have said, I wanted to test Law’s proposal for its usefulness, but I chose these two sites/objects because one represents an ‘ongoing’ computer presence in the town (an important actor in the story of the computer here) while the other was a new initiative; something which, like the iNet café, had only recently been constructed. If Law’s triad proved useful in examining these sites, then I could use these insights when I turned my focus to the iNet café.

And so I worked hard to understand the architecture of these two networks in terms of the discourses, the strategies and the materialities which were shared by all the participants that made them work (Yolngu and Balanda, young and old, human and nonhuman). But I found something unexpected. I found myself struggling with the duality Yolngu/Balanda. When I asked the question, *What stories are informing this network, making some things easier than others?* another question asked itself,

\textsuperscript{15} Law and Singleton (2005), 'Object Lessons', p339.
Whose stories? It was all too easy to hear answers which sounded either typically Balanda or typically Yolngu. I saw that in this way I was performing this dichotomy. I caught sight of what Law calls a ‘sleight of hand’, a hiding of the way reality is done alongside a representation of that reality. But I knew that this performed duality was a powerful actor in Ramingining and I realized that I shouldn’t have been surprised to find it at work here. I kept its performed nature in mind and soon recognized that I was actually performing a multiplicity, rather than a duality; that there is no one set of Balanda stories, or one set of Yolngu stories (or sets of Balanda/Yolngu strategies and materialities) even though at times they could be ‘made singular in practice’.

Recognizing this I went ahead and did just that: I made some singularities. I made some Yolngu and Balanda stories, strategies and materialities. I assembled them in Tables 6.1 and 6.2. I superimposed neat boundaries over the fuzzy edges of the interfaces between these worlds to allow the apparent simplicity to do some work. I used it to probe my two objects .. to push them around a bit and feel where they gave way and where they resisted.

I saw what Law had predicted: that these arrangements of stories, strategies and materialities were indeed holding the computer room and the playgroup in place, for a time. I then proposed that it would be the extent to which these different elements of architecture were shared by both Yolngu and Balanda that would contribute to their ultimate durability, until I saw that ‘sharing’ wasn’t necessarily what was going on. It appeared that in many cases, different stories, different strategies, even different materialities were nevertheless performing something shared: what ANT calls a boundary object.

We have already met this idea in chapters one and four, of objects which can exist at the boundaries of life-worlds, ‘both adaptable to different viewpoints and robust enough to maintain identity across them’. I found boundary objects in both the computer room and the playgroup, as the following accounts will show.

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18 ibid.
Network 1: The School Computer Room

The first network I examined was the computer room at the Secondary School. I visited this room from time to time. It was impressive. Three walls were flanked with benches supporting a collection of desktop computers. A bank of tables in the middle of the room was scattered with laptops, books, cameras and leads. I was likely to find several year twelve multi-media students working on projects.

I asked the following questions of the computer room.

- What discourses here embody meaning and reveal values? Whose stories are they?
- What plans and processes are at work, revealing what motives? Whose plans are they?

(See Table 6.1)
Thus the computer classroom endures from day to day. The participants are there performing their roles. They bring with them various values (inscribed in their stories) and come for various reasons (inscribed in their strategies). As a boundary object, the computer class serves two distinct actor networks – one which emerges largely within a Yolngu world and one which emerges within a largely Balanda-bureaucratic world. The strategies, discursivities and even the materialities which keep them going are mostly unshared. To the teacher they are Year 12 kids, departmental computers, a particular course with competencies she needs to keep thinking about. For the kids it’s a safe social environment, a place that allows for the thrill of making something come alive on a computer screen, a screen that interacts with you, gives immediate responses .. and may, just may, prove to be a key to the Balanda world.

The class endures for a time, but the performance is always fragile. It is fragile because although each of the architectural arrangements above allow for continuity, at any moment one of the links in the network thus assembled, may break. This is exactly what was reported when I visited the room in June 2006, when old computers had failed and not been replaced. The story behind that? Efficiency. They would be replaced in the pending ‘roll out’ of new machines, not before.

Then there were the students who dropped out. In June 2006, of thirteen multi-media students who had begun that year, only six were still involved. Their own stories, strategies and materialities had not held them. They had instead enabled them to resist enrolment by the computer room. Other stories had joined the narrative.

And if there was another, big story, like the school deciding not to have a computer room, or the Education Department no longer funding it, or there being no IT teacher that year (or all the Balandas leaving town), then for a time at least, there would be no computer room. Not until new discourses, evoking new strategies, which in turn became inscribed in new material arrangements (and evoked their own discourses), would the class return and display the level of continuity above, albeit now of a completely different assemblage. And perhaps even independently of Balandas.
### Table 6.1 Examining the architecture of the computer room

<table>
<thead>
<tr>
<th>Discourses</th>
<th>Strategies</th>
<th>Materialities</th>
</tr>
</thead>
<tbody>
<tr>
<td>What discourses here embody meaning and reveal values? Whose stories are they?</td>
<td>What plans and processes are at work, revealing what motives? Whose plans are they?</td>
<td>How are the materials configured? Who brought what here? Who brought what? Whose plans are they?</td>
</tr>
<tr>
<td><strong>Balanda</strong></td>
<td><strong>Progress, Education:</strong> Computers are important in the school curriculum. This is how you learn to use computers. <strong>Accountability, efficiency:</strong> Computers are fragile &amp; cost a lot of money. The school has a responsibility to look after them.</td>
<td>Confined spaces, air conditioning. Black-boxed computers, curriculum, year levels .. The computers are assembled in the Balanda world. Depending on the level of obsolescence built into them, they work for a while. They belong to the school. They live in a locked room. The teacher has the key.</td>
</tr>
<tr>
<td><strong>Yolngu</strong></td>
<td><strong>Progress, Education:</strong> I want (or perhaps don’t want) to learn about computers. They are important in the modern world. <strong>Kinship, Wellbeing:</strong> I want/need to be with my family and friends. I don’t want to be alone and I don’t want to be bored.</td>
<td>(Some) students come to class and participate in exercises and do learn a great deal. They are with family and friends, they have a lot of fun and produce some great pieces of work.</td>
</tr>
<tr>
<td>The stories are not the same but they do overlap in two ways. 1. They share a belief that computer learning is important. 2. The computer exists in both stories. It is not necessarily the same computer, but it manages to hold enough meanings for it to act as a boundary object, and so to stabilize these stories for a time.</td>
<td>There is no overlap in the strategic arrangements for ‘keeping’ computers, but other strategies bear some similarity in that they all involve coming to class. How much further they overlap depends on the particular student, on participation in a particular way. But this much shared strategy enables the class to assemble and to have continuity, so the class too is a boundary object.</td>
<td>The material configurations of the classroom reflect the affordances of the materials themselves and inscript the stories and strategies which have been invoked to assemble them. The ‘burden’ of their existence and arrangements is not shared equally, but for some time each day they ‘work’ for both Balanda and Yolngu.</td>
</tr>
</tbody>
</table>
Network 2: The Playgroup at the Early Childhood Learning Centre

Here is another object, another assemblage, at the school: the playgroup at the Early Childhood Learning Centre. There are no computers here and no locked room. There is instead a rectangular shed which opens on one long side to reveal a colorful space, scattered with cushions, toys and games. It was built in 2006.

From 2002 the preschool had been lucky to have the continuity of one teacher, Louise Cooke. She had been struggling to manage a de facto childcare centre alongside her preschool activities and in the same building, because young mothers often had children in both age groups. During these years she worked closely with these mothers and together they built the relationships which enabled the idea of the Early Childhood Learning Centre, incorporating the preschool and a playgroup, to take root. With an equal commitment by Coralyn Armstrong, the principal, the playgroup then proved able to enlist (and be enlisted by) a funding body - The Smith Family - and eventually to give rise to a building.

In Table 6.2 I asked the same questions of this assemblage as I asked of the computer room.
Table 6.2 Examining the architecture of the playgroup at the Early Childhood Centre

<table>
<thead>
<tr>
<th>Discourses</th>
<th>Strategies</th>
<th>Materialities</th>
</tr>
</thead>
<tbody>
<tr>
<td>What discourses here embody meaning and reveal values? Whose stories are they?</td>
<td>What plans and processes are at work, revealing what motives? Whose plans are they?</td>
<td>How are the materials configured? Who brought what here? Who owns what? Who uses what?</td>
</tr>
<tr>
<td><strong>Balanda</strong></td>
<td><strong>Early childhood education, Efficiency, Management:</strong> Young children need educational experiences in social settings. Babies shouldn’t be at preschool. The preschool teacher can’t run a childcare centre at the same time. <strong>Community development:</strong> Mothers of young children need places to meet and learn from sharing child raising experiences.</td>
<td>If children come to a fun, safe, place where there are opportunities to play and learn with other children then they will have a good start to their school life. Mothers benefit from sharing places and time with their children and other mothers in positive settings. If we fund this space .. If we build this space ..</td>
</tr>
<tr>
<td><strong>Yolngu</strong></td>
<td><strong>Family, kinship, responsibility:</strong> I want my child to start coming to school. My older child is in preschool and I need to be near them but I can’t leave my baby at home.</td>
<td>If my child comes to this fun, safe, place where there are opportunities to play and learn with other children then they will have a good start to their school life. If we support this .. If we work here ..</td>
</tr>
<tr>
<td>The discourses and the stories they evoke are not the same but converging. There is a powerful boundary object: a healthy baby!</td>
<td>There is even more convergence in the plans. Slightly different stories have resulted in very similar strategies. The space is a boundary object.</td>
<td>The material configurations of the playgroup are still skewed. They have been arranged by Balanda, funded by Balanda, but they are inscribing shared strategies and convergent stories.</td>
</tr>
</tbody>
</table>
The rubric has painted a picture of another enduring, though precarious arrangement. On any one day there may not be enough staff to open the space. If there are not enough kids they may merge with the preschool next door. New stories can evoke new strategic actions; the playgroup doesn’t cease to exist because it is closed for a few days. But this object ‘the playgroup’ only endures while the boundary object: ‘healthy babies in this space beside the Pre-school’ is held in place. It is held in place to the extent that the discourses and strategies and materialities of Table 6.2 hold it in place, but the Table also shows that these elements are multiple. As in the computer class, they are only more or less shared by the various human actors involved. If they were completely shared there would be no need to speak of a boundary object. So as well as paying attention to the way Law’s elements of architecture work to stabilize objects and make them durable, we again see that in the case of boundary objects, the work these elements do has to be either shared or complementary.

Ayre has already shown how she and the rangers at Nanydjaka/Cape Arnhem had to do the work of naming-tracing and journeying-naming in order to keep the boundary object, Nanydjaka/Cape Arnhem itself, in place. If any of this work stopped, then a different object would have been performed, either only Cape Arnhem (recognized in scientific tables of flora, fauna and geography) or Nanydjaka (recognized as it was performed through the Yolngu practices of journeying and naming). The discourses, strategies and materialities in this work were never going to be completely shared, but in their work they were upholding both and potentially extending the possibility of that sharing. It was the hard but essential work that Verran calls, ‘doing ontics’; working with each other, where necessary, across ontological boundaries. 20

I have not identified the ontic work involved in keeping the computer class and the playgroup in place day by day, as babies and computers consent to be performed in multiple worlds (worlds we too easily perform as ‘Yolngu’ and ‘Balanda’), but I have come to it via a different path. It was because I was interested in the question of durability, that I followed Law’s suggestion and asked what discourses, strategies and materialities might be holding the computer room and playgroup in place, and in

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20 See discussion in chapter 7, p251-2.
this way I got to see that these architectural elements were multiple and that they were working because they were holding boundary objects in place. But I chose these sites deliberately because I wanted to start exploring an idea I will take up in chapter seven; that these terms may be useful when it comes to questions about the kind of durability which is referred to in ‘development’ discourses as sustainability. I will argue there that when Yolngu and Balanda are engaged in projects together - and when durability is desirability - if that durability is going to be something more valuable than stagnation, it will require something of us which I will call ongoing negotiations in good faith over our stories, our strategies and the ways we organize materiality in the here and now. I have just acknowledged that multiple stories and strategies can hold stable boundary objects in place, but I will argue that while we only aspire to hold boundary objects in place and not to extend the ways in which we might understand and share each others stories and learn to grapple with them - and the ontic work this requires - we will always be holding precarious structures in place.

I will not be suggesting that through this work we will end up all having the same stories, all using the same strategies, and all reflecting the same materialities. No, (I hope) never! But if there is no overlap/sharing in the sense of no knowing about, no understanding or caring for, no recognising, articulating, and protecting of each others parts and sometimes yes, taking on, each others parts .. then there may well be durability but there will be no genuine sustainability – where sustainability here implies two things. It implies a resilience which doesn’t rely on completely discrete networks remaining stable. It also implies the ability to be flexible, to change in response to change without collapsing.

In the two sites examined here there was a gradation. In the first, a boundary object was held in place by the actors in two almost discrete networks all playing their part. While those networks remained stable because of the strength of their own internal discourses, strategies and material arrangements, the boundary object held. Kids came to class and so did teachers. Course work was ticked off, and kids fulfilled their own agendas. But the class remained fragile. If the kids didn’t come or there was a change in the teaching allocations at the school, the class dissolved. In the second site there was a shift towards shared stories, strategies and material
arrangements. If Balanda weren’t there, some of their stories and roles would be taken up by Yolngu and vice versa. And yet it too remains a semi-stable arrangement. The powerful discourses of ‘Early Childhood Education Management’ and of Kinship could as readily separate as they could meet. Here is the point at which Law’s triad of architectural elements may help us. As a heuristic it may facilitate the work I have called ongoing negotiations in good faith: the exchange of stories, the development of joint strategies and negotiated experiments in the ways materiality is ‘handled’. Chapter seven will return to this discussion and apply these ideas to the iNet café.

Meanwhile I want to return to the question which I have been exploring in this chapter: What is it that confers any kind of stability? Callon and Law have been using the word ‘architecture’ to answer this. Law expounded on what he means by architecture. Latour says it is about strong and weak ties.

I have quoted Latour above: ‘every time you hear about a successful application of science, look for the progressive extension of a network.’ In his work, Science in Action, he meticulously shows how the strength of a network depends on both its extent and the strength of the individual ties, but that these two are linked. Ultimately it is the work that it would take to undo a link, the cost of undoing it, which determines how strong it is.

His stories are classic science stories. They illustrate his argument well. If we now wanted to dismantle or displace, say, the Telstra phenomenon, we would have to undermine the phenomenal work which sustains it in place. It is not impossible of course as Optus has shown but they for one would not argue about the cost. Again, it is absurdly easy to dismantle it at a particular site. Ants can do it. A pair of wire cutters or an invoice falling to the floor can do it. But the network will tend to heal itself around these breaks. It is still connected because of the strength of other links. I want to focus on this idea of the strength of a tie.

Latour (1987), Science in Action, p249, emphasis mine. Note that in each of these quotes Latour is referring to a study of science and scientists. It was later ANT work which showed how these statements applied to any sociotechnical situation, ie. any assemblage in the modern world where things and people are irrevocably conditional on each other.
Latour has suggested two ways to think about it. Firstly, how many ties are involved. Secondly, how much it would take to break a tie. These are straightforward ideas. You would find them in a simple physics text on how to make something strong. Or any social text for that matter, but

[t]he question for us who shadow scientists is not to decide which one of these links is 'social' and which one is 'scientific', [but rather] 'which of these links will hold and which will break apart'?  

And how do we find if a tie will break? That is what controversy is all about and that is what ANT says we should always be interested in. That is when and where you see how networks are assembled and at what cost. That is where we see that strength (and ultimately 'power'), is an effect, and not a cause. All the classic ANT studies take us to a controversy, and Latour tells us what we have a chance to see there. To do so, he introduces a new term. He calls it *sociologics*.

From the observer's point of view none of [the actors in a particular network] ever think either illogically or logically, but always sociologically; that is they go straight from elements to elements *until a controversy starts*. When this happens they look for stronger and more resistant allies, and in order to do so, they may end up mobilizing the most heterogeneous and distant elements, thus mapping for themselves, for their opponents, and for the observers, *what they value most, what they are most dearly attached to.*

So here are those two ideas again: the extension of networks, and the cost of attachment. Let’s visit a few controversies and try out these ideas. Here are three stories.

The first is a slice out of a much larger story, the story of the work that it took to assemble the iNet café. This work began with negotiations with the Council in October 2006. It moved to Darwin in November in pursuit of a caravan, and moved back to Ramingining in December. This story takes place at the end of January 2007 on the days leading up to the installation of the van at the site which will become the iNet café. It has been chosen because it represents a vast amount of work, of the kind Law has called ‘heterogeneous engineering’ and because, given that this bit of

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22 ibid., p176, emphasis mine.
the work involved so much heavy labor and sweat, it provides an excellent metaphor for such work, the *cost*, of network building.

The second story happens in May 2008, sixteen months later, and six months after the iNet café was left in the hands of someone new. I will call this person Phil. Phil has decided it has all become too hard and has notified me that he is leaving, moving to another dwelling and role in Ramingining. I ask if he can hang on an extra week till I can get back but he tells me no. A controversy ensues. Just what we need.

The third story also takes place in 2008, while I am back in Ramingining. As noted, the NT Intervention legislation has mandated that all public access computers must have surveillance software on them to combat what the federal government sees as the scourge of pornography in remote Aboriginal communities. The person who is co-opted by the CEO of the Council to take on this work is Phil, who also works fifteen hours a week in the Knowledge Centre; my former job. Phil lets the surveillance work expand to take up much of the fifteen hours. The Knowledge Centre essentially closes. Another controversy erupts and another x-ray shot of the fragile network holding the Knowledge Centre in place is briefly visible. But here are the accounts.

**Story 2: Moving Mountains**

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**Thursday 18 January**

It is pending at last. Rumors say it will happen this weekend. Amanda, the Council CEO, assures me it is all arranged. Electrician, grass to be slashed .. the works. I’m not sure ‘the works’ includes water and my shower and toilet but I don’t dare to ask or even hope.

A wall of grass has grown up around the rough ground, with its even rougher cement patch, which is to become my home. There is more poo and the rubbish is legion. The kids from next door (who used to play here) help me enthusiastically. The four bags donated by Council are soon not enough. Six more are soon sitting clumsily trying to hold in their sad collections.

Plans for the CDEP guys to move the fencing (which I’m purchasing from an ex-teacher) fall through so I go out for reinforcements. *Njarritj* and his mates respond to the offer of paid
work and we do it together. We cut and unbolt the huge frames, two guys up on the roof to lower the top ones down to us. The awkward mass of the frames brings out the carefulness in the guys as they manhandle them onto my Landcruiser and when we creep through the town we go circus-like, moving lion cages. The tall grass at the site holds up the re-assembly of the fence, so we have to stack the panels till its cut. The promise of payment keeps our deal in place and our relationships on track.

Thursday evening I do more recruiting, but this time in Balanda camps. I’m on the trail of a pressure hose (with its seductive promise of power) and a load of gravel (so capable of filling sad, dusty hollows). It’s the elusive pressure hose on whose trail I have been for weeks. Everyone knows these things exist but no-one admits to being the one who can find or lend one. David from Resource offers to hire me one and I almost break down. I am reduced to something close to begging, and he relents, saying he thinks there is a small portable one around somewhere. I’m to call the next day. I make a mental note never to ask him for help again. On the road I meet Pete and get a cheerful promise he’ll drop one by the next morning. If he can find it and it isn’t broken!

On the gravel story I’m more encouraged. Grader driver Bob says, Yes, they can probably do it .. if it doesn’t rain. It hasn’t rained, well not much, but they haven’t been able to do it, and now I am desperate enough to look for him at home and tell him horror stories about the ground. He is wonderfully sympathetic. Says it sounds like he should bring the gravel, wet or not, tomorrow.

Friday: Pete’s pressure hose, so cheerfully offered, hasn’t been found. At the shed however there are new allies. The biggest maggots I have ever seen. I gaze at them in a strange gratitude.

At Council Amanda picks up on my suppressed distress. Says I’m not to worry. She’ll organize a pressure hose. She will come and help. It is all immensely reassuring.

At lunch time Bob calls by. He can’t bring the gravel, because Gutjan is at a funeral, but someone else is going to do it.

Hoses (just ordinary ones now) and power leads, waiting innocently enough where they were last used, lure me back and forth as I try to make sure we are ready for the morning, and the gravel. I take a load of rubbish to the tip and I’m back at the site when I see, to my astonishment, a huge truck coming, loaded with gravel. It is vastly more than I ever imagined. The driver doesn’t get out. Just wants to know where I want it. A mountain of wet clay and rock seethes out of the tray. I call up to him. Who’s spreading it out? Not me, he says, and drives away.
I stand there stunned.  Ŋarritj and some mates happen to be nearby.  Ŋarritj looks at my face and laughs.  I laugh too.  Bloody hell.  We’ve just been delivered a mountain.  You have to laugh.  Or weep.  Even the term heterogeneous engineering hadn’t prepared me for this!

I go over to Council and trundle back with a barrow, shovels and rake.  It is more than the ants in that Greek myth had.  Ŋarritj and two mates are still there and they take up the shovels and begin that back breaking, impossible job.  An hour later when they have covered most of the ground with a thin layer, Bob arrives on a tractor, to gaze at this wonder, and tell us he will return with a loader and at least move some of it into the space for us.  He can’t spread it, he says, because the loader is too tall for the roof.

When he comes back and has moved great spoons of the gravel for us, the guys and I now look at it in wonder.  Their hour of hard labor has been hidden and new heaps of the sticky rock-laced clay face us, almost in menace.  We all take up a tool and start on it.  Every shovel hits rock so you can’t get one decent scoop.  We scratch away at it like the mythical ants.  I’ve seen Yolngu guys at this sort of work before, filling in funeral holes, but not with this rocky soil.

Each scrappy shovel load seems hopeless, but somehow, gradually we see the shape of the gravel mountain range lessening.  Then Fred drives up.  He’s got a shovel.  He strikes it in the gravel and immediately realizes what a fool’s mission it is.  He stops and thinks.  Why don’t we wait till Tuesday and use the backhoe?  The van is coming tomorrow, I say.  He thinks some more, and says, I’m going to talk with David.  He almost runs away.  I know the feeling.

He comes back, cheerily.  He’ll come back in the morning, with the backhoe.  But I don’t put down my shovel and say Hurrah, stop everyone!  I think I just smile wanly and go on digging, like I need a moment to wind down.  After he drives off, we all stop.  They will bring a machine tomorrow, I say.

By the end of Friday there is just one more hurdle.  The shed!  Three hoses connected up to my neighbor’s house effortlessly funnel the water across the grassy space between us .. albeit gently.  The mythical pressure hose has eluded us all, but at least we have water, and bleach.  Amanda comes and we work quickly.  I’m surprised how soon ‘this is not on’ becomes ‘OK I can live with this’.  It needs another go, I think - the ‘go’ it will never get - but a few more applications of bleach on strategic spots, and the feeling changes to just ‘old shed’.  Yeah, I can live next to an old shed.
Strong young men, earth moving equipment, people with expertise and odd shaped bits of metal, satellite signals, electricity, water, mud, dogs, food, computers, tables, chairs, a roof, a caravan, a tent, flowers, babies and endless good humour .. all helped to shape the iNet café.

Figure 6.3  The iNet café at the caravan, Feb-Nov 2007

Photos: Anthea Nicholls
Saturday: I wake up with that, 'this is the day' feeling. If it doesn’t happen today, can I eke out my courage?

The tide brings the electrician from Milingimbi and the backhoe brings Fred. The electrician looks like he knows his business and soon has the area strewn with tools and leads but Fred admits he is only a beginner with backhoes. We work together, he on the great awkward machine that only just fits under the roof and makes the whole structure shudder and sway when he hits it and me with a small garden hoe, shifting rocks, and loosening stubborn ridges. Somehow we get it almost even.

The electrician’s work is still happening. It’s a much bigger job than I imagined. Then, towards the end of the day Steve (yet another of my army of helpers) tows my van from where it has been waiting these two months, since it arrived on the barge. When it settles it looks like it has been slotted into a rightful place, crafted for it. And heaven knows it was.

This story has revisited a short space of time before the iNet café was established. It has revealed something of the huge number of actors, both people and things, involved, but more importantly, something of its cost. In the story to come this cost will be found again: not just materialized in the stability of the relationship between that gravel and the land (who was going to shift it again?) Nor just in the stable relationship between the van, the site, the power supply, me and what was to come, as the rest of the bits of the iNet café were assembled. But also in the strength of the ties between these parts. And what happened when a controversy arose.

Story 3: Extending Networks

During February 2006 the iNet café and its setting beside the caravan gradually came together, and it settled into the role which has been the subject of other stories here. It became an entity in our town. It had a recognizable materiality, fostered and tempered by the discourses of western banking and recreation; a place to come and listen to music, play computer games, hang out. A place to come and do internet banking. A place to come and have a cup of coffee or browse in the box of library books that lived there. More importantly, by November it was also a place to do some serious training. Wämut, one of my male waku (sons) who had started training with the visiting IT trainers, had been coming regularly to learn more and we had enlisted the help of Jack, a Balanda visitor in the town, in this project. Waku, Jack and I spent many hours in November working together, on word processing, using the internet, sending email, printing photos.
At the end of November it was time for me to return to the university, to start writing this thesis. Reluctant to pack up the iNet café and interrupt Wämut’s training, I put out feelers to find someone who might like to come and live in the caravan and extend its role. I found Phil, new to the town and visiting a friend but looking for a role and opportunity to stay longer. He agreed to start work at the Knowledge Centre and to continue the iNet café. He joined Wämut and I in our daily lessons and fitted in well. They were new, fragile links but they seemed full of potential for strengthening.

I had other decisions to make too. The iNet café could only continue if the satellite account was maintained. This was definitely a link that could break without vigilance. I had purchased the satellite dish through HiBIS, a government program for subsidizing access to the internet in remote places. I had been paying the satellite account for ten months and now learnt that if I opted out of the contract, the satellite dish would be collected and offered for repurchase at more than one thousand dollars; a strategic act no doubt, strengthening the architecture of the Telstra network and threatening the viability of ours, here in the iNet café. But there was an alternative. If I paid a cancellation fee of three hundred and fifty dollars, the dish would be left in Ramingining and the account could be purchased (for example by the Council) for one hundred and eight dollars. The Council and I both agreed to this and the iNet café moved into a new phase .. a renegotiated strategy keeping the network architecture alive.

When I left, Phil and I kept in touch. It was a big challenge for him to come as a stranger to Ramingining and to live in the caravan in the wet season, but he seemed to be happy. I had difficulty however in getting him to keep data for me on the use of the computers. He wasn’t good at paperwork, he said. I needed it for my research, I said. It became the source of a controversy.

In May 2007 other accommodation became available and Phil decided to move. He wouldn’t negotiate a handover date so I quickly returned from Darwin. I arrived a week after he had left the van and found he had removed the modem, now presumably owned by the Council as part of its purchase of the satellite account, and the wireless router, which I still owned. I hoped he had done this for safe keeping, but when asked about their return a new controversy began.

No, said Phil. He couldn’t return them until I had gotten permission from the Council to use the modem, as it was now Council property and as an employee of the Council he was responsible for it.

DCITA (2006), 'Higher Bandwidth Incentive Scheme'.

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The network revealed its fragility. Ties which had seemed strong enough were suddenly so weak they had collapsed. I would need to negotiate some new links, but the CEO of the Council was new and harried. It was several days before I could meet with him and tell him something of the history of the iNet café. Enlisting a trail of paper and photos on the Tablet computer. He readily agreed to my continuing to use the account and equipment. Phil handed me back an armful of this equipment and leads. It wasn’t quite the materiality I’d had in mind.

Anthea: Will you reconnect it?
Phil: No, I don’t know how.
Anthea: But you disconnected it!
Phil: I didn’t record the way the leads were connected.

He came to the van and we tried one configuration. It didn’t work. We argued. He left saying, Try swapping the leads. I tried several times and eventually the old network burst back into life.

Phil and I took longer to recover from the encounter.

The iNet café, so apparently stable throughout 2007 proved remarkably easy to dismantle. It only took the disconnection of the leads and the removal of the modem and wireless. These were not strong ties.

By changing the architecture of the material arrangements at the van, Phil undid the functioning network. But in doing this he enlisted other actors, and he enlisted them on the basis of a story, a discourse, which he told himself and me. He enlisted ‘the Council’, the CEO, the bookkeeper and the satellite account records from Telstra, by means of the story, ‘I am an employee of the Council. The satellite equipment now belongs to the Council so I am responsible for it. I must protect it from misuse.’ He went to the Council, where the CEO and bookkeeper were new and didn’t know the history of the satellite equipment at the van and so easily enlisted their agreement with this discourse. He was off, as Latour says, ‘mobilizing the most heterogeneous and distant elements’.
In these moves he mapped out ‘for himself and his opponent and for observers’ what he was now ‘dearly attached to,’ and he assembled these parts, and strengthened the attachments, enlisting not just the discourse of responsibility but also the classic discourse of bureaucracy; so often invoked when things get too hard for Balanda in a Yolngu world .. a discourse inscribed in familiar strategies.

When I arrived back in the town I came with my own attachments: to the story of the way the caravan site and the satellite had been assembled, piece by piece (even shovel by shovel) over several months. Important in that assembling process had been all Law’s manifestations of architecture.

Material: The satellite dish faced the satellite, leads were connected to the modem and the wireless. I was paying my Telstra bills and was on track with my research. The computers were within the radius of the wireless signal. The caravan provided protection to the modem from dust and rain; the tent and the tables and the cardboard light box enabled and protected the computer; my relationships with my neighbors enabled and protected the caravan and the tent. The gravel became an island in the wet and kept us dry. My agreement with the Council was still in place, as were the materialities of my human connectedness as it had emerged over my years in Ramingining.

Strategy: As Law shows in the story of the Portuguese mariners, the teleology of human intentions is manifest in deliberate actions, in choices. Since actors bring to their networks their own affordances, and their attachments to prior networks, some of these attachments are to do with teleology, and for people this may mean to possibilities in the future. I came attached to my intention to do research, to complete my PhD. This intention was embedded in a strategy which enabled me to put money into the project. The money became an actor along with the story that made it all OK for me. When the network was assembled at great cost (and not just money), we then daily held it in place, performed the relationships and the story which had made it possible. But we didn’t do this work at the same cost every day.

Strategic architecture, configuration, can create a meta-stable state which requires less energy to hold in place .. for a while, so long as the discourse remains stable.

Discourse: and of course the discourses which gave all of this its limits and its possibilities of meaning, have been at work all along. They are both an assembling principle (in that the discourses act as filters for what actors and actions are legitimate or not) and a holding principle. Through them we can relax and normalize our performance; we know the script. We don’t have to learn a new one just yet and we can stave off competing discourses.

In the story in which I had lived and worked at the caravan in 2007, I had not only participated in the assembling of the caravan site, piece by piece (not forgetting the shovels and the gravel) but I had also purchased the satellite and wireless equipment, had negotiated its installation, had then suffered the agonizing pains of its early ‘dissent’, when it failed to act as a conduit for the digital signals of the internet from the satellite to the computer, and more actors had to be enlisted. I had then watched over its use for ten months. I’d invested time and energy into performing its usefulness. I had enlisted lists and cameras, meticulously recording the names of the actors who came to use it, and sometimes their images. I created memories. My personal discourse was enlarged. The network in which I was both heterogeneous engineer and engineered, strengthened. We called it the iNet café.

When it came time for me to leave, it seemed like a travesty to close the iNet café. Happenstance provided an actor to take my place in the caravan and to keep the internet access open. I chose to bear the cost of the cancellation fee on the satellite equipment so that the Council would have the option of purchasing it at the hugely subsidized rate.

As a new actor, grafted into a breach in an already functioning network, it wasn’t easy for Phil. He naturally worked out his own relationships with the various other actors and they were different from the relations I had had. On a couple of points we

\[28\] Although many of my costs, including the cost of the HiBIS satellite and account, were later reimbursed by the university as part of my research allowance, at this stage this had not been negotiated.
subsequently fell out. Goodwill metamorphosed into bad faith. We no longer trusted each other. Stories were invoked to justify feelings and behaviors. There was now a breach in Phil’s relationship to the history of the project and its relationship to me. He subsequently strengthened his relationship with another network, the Council and its parts and personnel. Latour had predicted this:

When this happens (actors in a controversy) look for stronger and more resistant allies.  

And he had described how this may happen:

.. they may end up mobilizing the most heterogeneous and distant elements, thus mapping for themselves, for their opponents, and for the observers, what they value most, what they are most dearly attached to.

When Phil saw an opportunity to leave he felt no obligation to negotiate with me or to acknowledge my investment in the project. He was now part of a network stabilized by such discourses as Bureaucracy, Responsibility to an Employer, Protection of Yolngu from Pornography. These discourses produced a story where I was now a potential outsider to the project and must renew my permission to be a guardian of the satellite equipment. These discourses worked with a materiality which had built into its strategic architecture the sorts of necessary processes which would make the council bureaucracy now become an obligatory point of passage for me.

Timing too, became a key actor in the materiality of this disintegrating network. I returned to Ramingining on a Saturday, but I didn’t get to ask Phil about the equipment until Monday afternoon. Meanwhile I’d reported to the Council Monday morning. I hadn’t raised the question of the internet because I hadn’t yet discussed with Phil its status. I knew the CEO was new and unaware of the history of the project. I later gathered that before I got back to the Council, Phil preempted me, thus raising a question there re my role. If the timing had been changed, so too could the outcome.

There was, as Latour might say, a prodigous assembling of parts. And there was more. I was aware of the wad of paper that had grown over the course of the project,

30 ibid., emphasis mine.
that represented the permission gleaned for my work, assiduously, from the Council, the Northern Land Council and the university ethics committee, and the reports I had returned to the Council. I was aware of my relationships with Council members and the people who came to use the internet. I knew, on the other hand, that without these relationships Phil had found it hard and in the end had not been committed to the iNet café. He had in many ways neglected it and wound it down.

I was moreover, incensed that my relationship with the Council was being dictated to me, ‘managed’ by someone with whom I had already fallen out over issues of trust and expectations; someone new to the town in which I’d lived and worked for six years.

But notice what actors have come into this discourse: histories, memories, feelings, motives, expectations. Memories evoking feelings. Feelings evoking strategic behavior. Motives evoking discourses which then act as assembling principles to gather the parts of the network which a particular actor will become ‘dearly attached to’. This is people talk, but these people can’t shake themselves free of the larger ‘parts’ they were playing. They appear in this account as complex mediators, not intermediaries - not simple, whole entities. Some of their innumerable ‘parts’ have been exposed by the conflict, as ANT predicts; parts which have been assembled throughout the life of the person, materially, strategically, discursively, through processes whose traces have long been hidden, and now in a controversy lie exposed.

This story gave way to another. The Federal Government had announced its radical intervention in the NT and laws had been passed to include the surveillance of publicly funded computers. A letter now came from the Department of Families, Community Services and Indigenous Affairs, dated 1 April 2008 and addressed to the Community Council CEO. It stated:

As part of its Northern Territory Emergency Response the Australian Government is implementing measures to reduce the prevalence of pornography in communities. Organisations that receive public funding now have a responsibility to ensure that computers ordinarily located in a prescribed area are not used to hold pornography or other offensive material.  

31 Letter from FaCSIA to Ramingining Community Council, 1 April 2008.
The letter went on to state that the CEO was responsible for

1. Installing and maintaining an accredited filter on all computers;
2. Keeping records on the use of all computers;
3. Developing a computer use policy and notifying users of the policy; and
4. Auditing the computers every six months.

These daunting requirements were subsequently delegated to Phil, as part of his work for the Community Council. He was already employed fifteen hours a week to run the Knowledge Centre.

Story 4: Passwords, Keys and Doors

May 2008

A two page English language notice has been posted in the Council, close to the public access computer there. It spells out the new rules for using the computers. Phil has installed the surveillance software, Integard, on the computers which are, or have been, available for public use. These are located at the Knowledge Centre, the Council and the Women’s Centre. But the latter now has a user password to open the computer and no-one at the Women’s Centre seems to know what it is. Soon after my return Phil also puts the Integard program on the Tablet computer at the iNet café.

There is now a two-step procedure for getting an Integard password which will allow use of any of these four computers. First you get the password from the bookkeeper, then you give it to Phil and on Friday afternoons he will put it on a computer.. that is, on only one of the four computers. I protest that this may mean a long wait for someone who gets their password early in the week but Phil is adamant. He says he is too busy to consider any other process. I protest that people should have access to all the public access computers but again he is adamant, that it would take him too long to keep track of everyone on all the computers; more than his three hours a day. He tells me, that if he has ten people on three computers that means thirty reports he has to print out. (He later concedes this stance to two computers twice weekly but by the time this is decided we have argued too long for me to try and make it more.)

13 June

Phil: I have to do regular reports on everyone. I have nominated every two weeks.
Anthea: But other communities aren’t doing that.
Phil: I don’t care what happens in other communities.
I soon find that Phil is committed to this interpretation of the process of surveillance but not to the Knowledge Centre work which has practically ceased. He has at some stage decided he won't be available to help with banking enquiries; he no longer involves himself or the community in the rich database project which NTLIS has started there in July 2006, and he has taken iTunes off the computer.

Over two periods of a total of four weeks I call at the Knowledge Centre sixteen times. Only four times is the door unlocked and only once is there any user. On that occasion two teenagers are on the internet; one, a visitor from Elcho Island, says that Phil had opened the door for her. Five times I find Phil there behind a locked door, which he opens when I knock. He is always working on at least one of the computers.

During these weeks the date for the first six monthly audit arrives. I understood that will involve Phil in extra work on the computers but I don't understand why the Knowledge Centre has to be closed for so long to enable it. When the audit is done I expect the Knowledge Centre to be available again, but it isn't.

I try to engage both Phil and the CEO at the Council in a dialogue about the issue of Yolngu access to computers. The CEO admits that he isn’t interested in the internet, that he hates it. He is adamant: We aren’t disadvantaging them, because they could buy computers. If they can win five thousand dollars at a card game they could buy a computer. (We invoke our respective discourses.)

He is sure that the surveillance mandated by the legislation requires extreme measures and is happy to let Phil attend to it, despite any fallout at the Knowledge Centre. I show him statistics for how the Knowledge Centre has been used the year before and say that there is nothing like this happening now. It doesn’t help. He is committed to the strategies now in place.

I raise with Phil the question of NTLIS money being used to fund the Intervention and he replies that it happens a lot; that is, that money gets used for different purposes. (Discourses and strategies embed themselves in materialities.)

Several times over these weeks I ask if I can help with putting the passwords on the computers. The CEO always replies that he can’t have lots of people doing it, and so I am never ‘allowed’ to help with this task that is proving so apparently taxing to both Phil and at times to the bookkeeper. The CEO suggests rather that the university could take over responsibility for the Tablet.
From mid May to the end of June there are essentially only two public access computers available, at the Council and the iNet café. When someone attempts to log into the internet a screen appears which indicates the list of usernames people have chosen to match their passwords. The Council accumulates these more quickly than the iNet café. I don’t get a chance until 11 June to check the Knowledge Centre list, and at that stage it only has three names. See Table 6.3.

Table 6.3  Usernames per public access computer following the introduction of Integard on 30 April

<table>
<thead>
<tr>
<th>Date</th>
<th>Council</th>
<th>iNet cafe</th>
<th>Knowledge Centre</th>
<th>Women’s Centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 May</td>
<td>unknown</td>
<td>3 names</td>
<td>unknown</td>
<td>password disabled</td>
</tr>
<tr>
<td>27 May</td>
<td>9 names</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 June</td>
<td></td>
<td>4 names</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 June</td>
<td>13 names</td>
<td>3 names</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 June</td>
<td>15 names</td>
<td>5 names</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 June</td>
<td></td>
<td></td>
<td></td>
<td>4 names</td>
</tr>
<tr>
<td>24 June</td>
<td></td>
<td></td>
<td></td>
<td>6 names</td>
</tr>
</tbody>
</table>

On 13 June the bookkeeper tells me twenty-two people now have passwords, including three Balandas. Of the cryptic usernames on the Council computer I can only trace a few. Someone is doing regular internet banking and I discover who it is because they forget to log out. I know at least two names are not being used because people tell me they have forgotten their password or they come to the iNet café, telling me they ‘aren’t sure’ at the Council. I make a list of internet bankers from 2007 and track down eighteen of them, directly or through a family member. They tell me they are not using internet banking now; they are using the phone now, or doing internet banking at the school. Or maybe that they are using a card now.

And meanwhile the passwords and shut doors go on doing what they do so well: they keep people out. But meanwhile too, another story has been unfolding. The first person to get their password on the Tablet computer in the iNet café, at my encouragement, was ḟjarritj, a teenager who lives near to me and calls me märi, (mother’s mother). This story begins to unfold on a Friday afternoon, always a potentially unsteady time, as the Balanda work week comes to a close and a town without 24/7 trading prepares for the weekend.
31 May

I meet Phil in the store. It is Friday and he asks if I have any passwords to go on the Tablet. I reply, No, the bookkeeper has been away. (So nobody has been able to get one.) I tell him I am letting people use my password and he in turn tells me to be careful. The person who has just used my password is the coordinator of the Women’s Centre, where access is currently down, so I feel ruffled at this remark. I say something to this effect to Phil and he replies, Well, if it happens you have to report it.

I go away troubled by all this effort to monitor access to pornography in contrast to the pitiful effort to maintain access per se.

The same afternoon Ėarrity comes to the iNet café and is on the Tablet burning his own music to a CD when I leave to take my dog for a walk. I tell him to leave the Tablet and burner in my van when he’s done. Just as I leave his cousin, Ėarrity 2 comes in, sits on the couch and starts to play the guitar someone has left here.

When I get back it is dark and Ėarrity 2 is still here, now on the Tablet, looking at photos. I ask if he has been on the internet and he replies that he wants me to help him understand something. He goes to the favorites tab and clicks on a credit union site. The screen tells us it ‘Can’t find the server’. That is a relief, I think. But then he tries another credit union and it opens. I then realize Ėarrity hadn’t logged off and that I had forgotten to explain how you do it. Ėarrity 2 goes into his account and gets me to explain something re his balance. Then he checks out and leaves quickly. I immediately go to the internet history and to my dismay see one of them has been typing ‘big men and big grles’ (sic) into Google as well as a few variants: ‘betman’ and ‘batman’.

I have a quick look at the links. They don’t look too worrying .. but I am worried. I realize I’ve been too hasty in laughing at Phil’s worries, and annoyed at myself. I try to reconstruct from the sequence of the hits who it was who typed in the words, and it seems to be Ėarrity whom I have talked to about why the passwords are being used. But I can’t recall telling him that other people can check everything we look at. I resolve to talk to them both tomorrow.

1 June

I talk with Ėarrity re why we log off and make a picture to show him how. I tell him about computer memory; that government and police can read what we look at. I ask him why he typed ‘betman, batman’. Kids told him about batman, he says. I ask then about ‘big men and big girls’. Wrestling, he says immediately. I tell him, Ask me how to spell ‘wrestling’ -
I am relieved this breach has happened before this audit, because it will show us how the system will deal with it. I also show Phil the clear language statement. I ask if he wants one for the Knowledge Centre? He tells me, No – he’s discussed this with the CEO and it’s not legal if it’s simplified. I reply that it isn’t legal if we can’t prove that people understand. He insists that is not his problem.

I later confront Njarritj with what the computer memory has told me, but he is certain some other kids must have gotten his password; maybe I dropped his paper on the floor. I spell it out again, anyway, the importance of ‘not typing sexy words’.

I let the CEO know about what now gets referred to as ‘the breach’. And when the audit is completed sure enough he tells me they can see it there, minute by minute, and that the lad concerned will have to come to a meeting, which I too should attend. He would rather do this than report it to the crimes commission, he says. I agree, but the meeting never comes about. I am relieved. I muse that there are more sexy images on the DVDs for sale in the

Using computers with Integard

Integard is a program on this computer. It is there to stop people using computers for things like
- sending bad messages,
- doing something illegal (rommiriw)
- looking at pornography (sexy pictures)

You have to have a password now, to use the internet. You can get a password at the Council.

Integard has a memory and remembers what you do on the computer. It remembers your name and what you type into Google and what Internet sites you visit. It keeps the story in its memory and Government people check it. If they find something illegal they will report it to the police.

So …
Don’t look for sexy pictures.
Don’t type any sexy words into Google.
Don’t let someone use your password.
Log out when you finish.

Use computers for good things!

Figure 6.4 Clear Language Statement prepared to explain the computer surveillance software
store than anyone would be finding on Google, now the filter is there. I talk later with one of the Yolngu women. She tells me kids are getting it on their mobiles now.

Meanwhile the arguments over the password process continues, but I don’t ask again for some weeks if I can be involved. I feel I have ‘proved’ to Phil and the CEO that they have been right all along. I do however call a government department to find out if the surveillance is really supposed to be taking up so much time, up to fifteen hours a week. The person on the end of the line is rightly puzzled. There are six monthly audits but in between, she asks, Why doesn’t he just use a manual record? I don’t tell her the answer to that.

Meanwhile too, a trainer from NTLIS has spent three days with Phil at the Knowledge Centre. I raise my concerns about the situation there but she says NTLIS can only work through the Council. Nevertheless after she goes Phil and the CEO agree the passwords can be put on two computers, and can be entered twice a week. As it turns out this is small comfort because the Knowledge Centre still seems to be closed most of the next week and then at the end of that week, on 21 June, Phil leaves for four weeks holiday and doesn’t return. He has suggested a former worker at the Knowledge Centre covers for him but the Knowledge Centre remains closed. The internet connection on the Council computer goes down at the beginning of July and the iNet café remains the only internet access in the town. It still only has six passwords on it. One of those is mine and I think another is Phil’s. Crazy that our relationship deteriorated so badly that I have never even been able to ask him that question!

At the end of July I return to the university and the iNet café closes. I leave the Tablet computer with a family with a growing familiarity with computers. The Knowledge Centre eventually resumes some of its functions and new directions with new staff .. in a totally new story.

Strong and weak ties, strong voices

But what does this story have to say about strong and weak ties? Certainly it continues the story of durability, illustrating again the mantra of this chapter, that at times of controversy actors map out what they are ‘dearly attached to’; what it would cost them dearly to allow themselves to be detached from, and that these attachments are heterogeneous. As Latour has predicted we have seen the progressive extension of networks holding things in place and as Law has suggested we can examine these networks for the discourses, the strategic arrangements and the materialities which
stabilize them. We have seen how when something failed, it was possible to trace our networks and find the breaches, and to analyse the breakdown using these same three criteria.

But this story has also opened the way to a number of potential discussions. One is a discussion of the role of Balandas in remote Indigenous communities. This will be taken up in chapter seven. Meanwhile there are two things which need to be said in opening up this subject and in telling these stories.

The first is this. Phil (along with the nameless ‘CEO’) has had to take the weight of introducing this issue. I therefore re-invoke what was said in chapter two about my use of this representation. Phil does not represent the person who worked in the Knowledge Centre and for a while lived at the caravan. Phil is my creation, an actor made to carry my account of one side of a controversy. It is my account, not his. I have not even tried to be (very) fair, though I have tried very hard to be accurate. I have recounted those aspects of the controversy which open a window on an important aspect of life in Ramingining: the role of Balandas. I believe we need to have this discussion and we can’t do it without telling these stories.

The second point is this. It has been necessary in this chapter to listen in on people talking and sometimes it did seem to be just Phil, the CEO and I, fighting (and alas I have come across a bit too heroically). However, as this chapter has said over and over, Phil was never just Phil and I was never just me. He was always endowed with his links to the Council, to the ‘great’ NT Intervention, and moreover with a lockable room, as capable of keeping people at bay as it was good at keeping computers safe. I was never not my computers, fieldnotes and permission slips and the van and all the cups of tea and coffee we drank and my place, as Bulanydjan. If ANT is a toolkit of sensitivities\(^\text{32}\) then this is something it has sensitized us to. All actors are networks and these networks are heterogeneous. Yes, in our controversies our human voices rise up (especially our Balanda voices). We get caught on our human-ness. Our voices are loud and our actions are so often decisive. I will take this up in the next chapter but here it is important to acknowledge something else: the leavening effect

\(^{32}\) Law (2008a), 'ANT and Material Semiotics', p142.
of ANT sensibilities; the continual challenge of material semiotics to human determinism.

Obligatory passage points and dissent

But meanwhile the story draws attention to another network phenomenon which often arises in ANT stories, that is the creation of a particular kind of tie, when two parts of a network become attached through only one link, that is an obligatory passage point.

Callon introduced this idea in 1986, when he showed how the scientists in St Brieuc Bay tried to induce the scallops to behave in a certain way, and to convince the fishermen that the future of the bay also lay in a certain path of action. More recently Brey discusses this behavior in his paper on the role of technology in power relations, but he doesn’t use the term ‘obligatory passage point’. Rather he describes actions that deliberately limit the range of actions available to another, to satisfy a vital interest. We saw the outcome of such strategies at work in the story of Glen and Daisy, endeavoring to access their money in chapter three. And here is another, created by Phil and the CEO between Yolngu people and their access to the internet. Or rather, by the passwords, the NT legislation, by the affordances of the lockable room with its computers and their air of ‘don’t interrupt us, we are doing something important’ .. all of which were Phil and the CEO in this account.

It is interesting that ‘obligatory passage’ stories, for example these about banking and fishing, are usually about attempts by the creator of the ‘passage’ to enlist actors, to enroll them to behave in a certain way. Latour first uses the term in *Science in Action* in reference to a mill, which has successfully interested/enrolled the wind in the making of bread. The engineer has to strive in each case to seduce, to attract. But here in this Ramingining story, an obligatory passage point has been set up which appears to be designed to discourage, rather than enlist or encourage. Its designers purport to be enrolling a certain type of behavior: planning ahead, respecting certain notions of work time and personal time. (And don’t admit to trying, at the same time, to prove to their superiors what good bureaucrats they are.)

33 Callon (1986a), 'Some elements of a sociology of translation'.
But it is quite blatantly also discouraging, with respect to access to the very network it is designed to link people to.

When Njarritj 2 went to the Knowledge Centre and asked if he could use the internet - something he had done easily in the past - he was told he had to go and get a password and bring it back on Friday.  

When Galikali got her password it took two weeks to get it onto a computer because the procedure for getting it done was changing over the first weeks I was involved. The first week Phil accepted a piece of paper on which the bookkeeper had written the codes and entrusted them to me. The next week Phil only wanted names and collected the codes from the bookkeeper himself. Alas, because I didn’t know what family name Galikali had used he said he couldn’t collect her information (even though the list was never longer than 22 names). Then he insisted the person had to go to the bookkeeper themselves and tell her what computer they wanted to nominate. I couldn’t be entrusted with this either. 

So Phil and the CEO, shorthand for the larger assemblages they are the spokesmen for in this account, created an obligatory passage point. If it wasn’t exactly designed to keep people away, it certainly wasn’t designed to encourage, and god forbid to ‘seduce’ them into using the internet more. But note what happened: people found other ways. Callon called this dissent. When the scientists tried to get the scallops to attach to the breeding racks and to get the fishermen to wait, they dissented. Both revealed that they had stronger ties elsewhere. The scallops avoided the breeding racks and bonded to other objects. The fishermen, anxious for their families and income, plundered the experiment. People here avoided the computers. They found other ways. And I too dissented. I let people use my password. I provided an alternative route. Ultimately the procedures were not an obligatory passage point.

12 June 2008: I am at the school sports and keeping an eye out for internet users I remember from last year. I want to ask them if they still do internet banking. I see Gamanydjan whom I know is educated and articulate but I can’t recall if she used to come to

36 Personal communication.
37 Fieldnotes A5-16.
38 I use the larger terms, so we never forget, but I’m not letting us off the hook. We may always be embedded, but we are never hapless.
the Knowledge Centre or iNet café. I ask her. No, she says, she doesn’t do internet banking and doesn’t want to: Because people might humbug her.

So one way to ‘undo’ a network, or to resist its assembly - an extreme version of reframing the meaning of technology\(^{40}\) - is just to avoid being enrolled. And one way to do this is to make a decision, as Gamanydjan did here, and in the process to map out what was more important to her; as did all of those who avoided Phil’s password procedure and found other ways to do their banking.

This act of reframing an inscription is sometimes extreme enough to be described as *not reading the inscription* in the first place.\(^{41}\) Examples abound, especially in the domain of the sacred: someone in the western world stops being in awe of say, the catholic mass; a young person in Ramingining stops hearing the power in the sacred names. And of course it is not restricted to encounters with potentially sacred objects. If the ‘value’ inscribed in a Telstra bill, or a fifty dollar note, is not recognized, the bill may be left on the floor of the Council building, gathering footprints. The fifty dollars is spent on something which is soon lost or broken but it isn’t lamented. An expensive computer which can link you to the stock exchange in NY is used to play Bubbles. People find and make other paths.

In chapter five I have tried to elucidate something of the richness of life in Ramingining, of the choices people had and exercised despite limitations and frustrations, even despite strategic devices to either woo or discourage. When computers were available, some people used them. When training was offered some people availed themselves of it. When access was easy or facilitated (when doors were open and there were bāmaras and appropriate relationships) more people were involved. When access was hard some persisted and some found other ways to do what they wanted. But in this chapter I have turned the focus to what the stories have also told: there was also pain and loss; there were unnecessary delays, unnecessary hardships. There was inequity and there were insults.

This story will lead back to a general discussion of Balanda roles in remote Indigenous communities, not because they are the only actors who can undo networks, but because they are most often the actors who stand next to obligatory passage points; who have the affordances and opportunities to create them and then ‘police’ them through their power over discourses as well as strategies and materialities. This is not a new subject in development discourse. It is usually called gate keeping.

So in a story about durability, and what accounts for it, we have seen that strategic engineering can create networks that are designed to enlist actors in certain ways and so to create obligatory passage points which actors must pass through in order to do something else: to do banking, say, or use the internet. Banks have created user passwords and many learn to use them while others resist. The NTER, some computers, some special software, the CEO and Phil together created a new obligatory passage for users of the internet in Ramingining. Some people opted to learn how to pass through it. In each of these cases, although they are by no means alone, Balanda were significant actors in the engineering of these pathways. So again, these stories are leading to questions about how Balandas behave in Indigenous towns.

Note too that the links which were assembled to create these obligatory passage points were in themselves very weak links. They could be removed by the actions of one person. At other places in this thesis we have seen them removed by ants or geckos, by storms and lost keys. They are however, the sorts of links that ‘projects’ are usually interested in. They are the telecommunications and organizations and funds and procedures for getting access to the internet and keys to buildings where resources are kept. They are, again, the ones Balandas have most influence over in Indigenous communities. They are often obligatory passage points to other resources and services, to access to choice and opportunities in education, health, and employment. So much hanging on them and yet so weak! They can only be strengthened through nurture. They have to be held in place by the sort of work which Latour has taught us to be aware of; the sort of work which becomes evident

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42 See for example Dyson (2006a), 'Remote Indigenous Australian Communities and ICT'.

once such a network is blown apart, as it was in Ramingining in the stories told here. And note too that while such links have the potential to be broken they are also opportunities for tinkering. They are sites of potential change. This is especially true of weak links which are also obligatory passage points. Those who have the care of them have a special responsibility to nurture them. As promised I will come back to this.

*Sociologies: the art of summing up*

The several strands of this chapter are coming together here. Networks are held in place by strong ties, or by nurtured weak ties. If you look you will see the configurations of the discourses, strategies and materialities which account for their continuity. They can be modified or dismantled through commitments to stronger ties elsewhere. They can change through teleologies which may or may not have something to do with human agencies.

But again if you look, or listen, you will discover the *sociologies*, of this particular configuration. Here is Latour’s word again. Actors ‘mapping for themselves, for their opponents, and for the observers, what they value most, what they are most dearly attached to.’

Sociologies is reminiscent of Olivier de Sardan’s ‘entangled social logic’. When Sardan uses this term he is referring to the business of how people get things done; specifically, how development projects get done. Although he acknowledges the entanglement of all sorts of actors, which might otherwise be labeled climatic, financial, administrative, ecological, etc, unlike the ANT writers he is not striving for symmetry in the way he talks about actors. He is talking about how *people* get things done (he calls them ‘social actors’) and he sets these people in heterogeneous contexts. He is interested in the local, specific strategies or logics used by people, whether they be the ‘developers’ or the ‘developees’. But I am interested because, like Latour, he demonstrates how this approach deals with controversy, a particular type of controversy, and one which I could have used above

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45 ibid., p139.
46 ibid., p137.
instead of the stories I chose, that is, stories about ‘Balandas behaving badly.’ This other type of controversy is common in development accounts: that is, that the way ‘things get done’ in development settings is rarely the way developers wanted them to get done.\textsuperscript{47} It always results in controversy, however repressed, and in turn raises questions about the use of resources, and the idea of legitimate and illegitimate use of resources.\textsuperscript{48} These terms deftly describe the ‘rub’ in these controversies.

For example, instead of telling here how controversy arose between ‘providers’ of a resource, that is between me, Phil, and the CEO, I could have told a story about the long, ongoing rub between Balandas working at the Council and Yolngu working at the Women’s Centre. I have already provided some hint of this scenario in the house map of computer use at the Women’s Centre in Figure 5.6, in chapter five. This distribution only represents computer users (over a few months) - \textit{not} all of the users of the Women’s Centre - but no-one was surprised at this distribution. It was already ‘well known’ anecdotally, that use of the Women’s Centre, in general, was not distributed evenly across the town. And in turn this pattern of unequal usage of resources provided by an ‘outside’ body is not surprising in other communities in Arnhem Land. It is not surprising in development literature per se. Olivier de Sardan says there are ‘countless examples’ in African development projects.\textsuperscript{49} But he also shows how a ‘social logic’ approach can defuse the frustration and blaming and defensiveness which so often characterizes discussion of and reactions to this phenomenon, with its labels like ‘legitimate’ and ‘illegitimate’ use of resources, and in which Ramingining was no exception.

It isn’t an aim of this chapter (or thesis) to document this particular dilemma. The aim here is to make sure it is not excluded from this account and to endorse the use of concepts such as sociologics and ‘social logic’, together with the mantras of ANT:

\begin{quote}
\ldots every time you hear about a successful application of science, [or anything else] look for the progressive extension of a network. Every time you hear about a failure \ldots look for what part of which network has been punctured \ldots\end{quote}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{47} ibid., chapter 9, p137.
\item \textsuperscript{48} ibid., p148.
\item \textsuperscript{49} ibid., p149.
\item \textsuperscript{50} Latour (1987), \textit{Science in Action}, p249.
\end{itemize}
\end{footnotesize}
when approaching such dilemmas, including of course, the conflicts described earlier in this chapter. Certainly the standard frustrations and ‘easy’ (but ultimately fail-
sure) solutions, often generated in Ramingining in response to contradictions regarding use of resources, fall away when approached in these terms. Latour is adamant on this theme:

> We cannot say anything about reason or logic, but whenever we run against other people’s claims, we realize that other things are tied to them and we put these links to the test.\(^{51}\)

All actions like ‘dividing’, ‘classifying’ or ‘ranking’ do not do justice to the unpredictable and heterogeneous nature of the associations. The only thing we can do is to follow whatever is tied to the claims.\(^{52}\)

But then of course, the question always remains: having approached in these terms do you see anything new? Anything useful? That is the work of the next chapter. I have already promised many things for it, including more discussion of:

- the use of the idea of architecture, in discourse, strategy and materiality, in talking about durability, especially the kind of continuity which is referred to in ‘development’ discourses as sustainability; and

- the role of Balandas in remote Indigenous towns where they often end up associated with obligatory passages to resources; that these represent weak links in networks which require nurture and responsibility, that is, good faith.

\(^{51}\) ibid., p198, emphasis mine.

\(^{52}\) ibid., p202, emphasis mine.
Chapter 7 - Sitting down with the actors: Facing ourselves

We [humans] are the only animal that spends most of the day reinventing the past and imagining the future.

Jim Crace, ABC RN 6 June 2008

This chapter has been set up to do a lot of work. Important questions and many threads of ideas have been left lying, to be taken up here. There is reinvention work, as Actor-Network Theory has taught us to do it, and there is imagining work to be done for the future.

After so much has been said about ANT, about the way it accompanied me as my bämara mala when I returned to Ramingining - and after turning so often to its spokespeople and the actor-networks which produced them, quoting their words in order to grapple with something I encountered in Ramingining - this chapter must address the question, What help were these bämara in thinking about how we now go on?

This chapter has also been left with these tasks:

- To return to Law’s suggestion that architecture - as expressed in material, strategy and discourse - is a way to understand continuity. To use it to examine the iNet café, and in doing this to take up the next task:

- To say more about the role of Balandas in remote Aboriginal towns and so return to concerns about how we ought to live and what kinds of people we want to be, as researchers or ‘development agents’ in an Indigenous town.

- To recall the question which underlies this thesis: How does the computer live in Ramingining?

Answers to this last question of course have been accumulating in all of the previous chapters. Marshaled to come on stage in some sort of order, act by act, (taking turns
to be othered), the cast members have been gradually introducing themselves ..
loudly, meekly, eagerly or belatedly as their affordances allowed. Often unheard
because Balanda voices were advantaged in the English language stakes, Yolngu
nevertheless spoke out. The material world, even more disadvantaged, added its
voice. (Both have more to say in chapter eight.) Objects and events played out
(‘played up’) as particular configurations of their parts; particular associations of
relations. Sometimes they felt and looked and behaved like networks. Sometimes
(as ANT predicted) they behaved more like fluids - flowing around obstacles - or like
fires that jump between sites, dying and flaring up and refusing containment.

Revisiting: Ramingining, complexity and ANT

If you wanted to ‘capture’ a moment in this play (for a Balanda display) you would
employ Brugel, not Vermeer. Only partly satisfied, you might attend a bungul (a
Yolngu ceremony) and attend to the performance of each of the actors. The dancers,
each telling of another being, another place, another time and yet remaking it all
now. The music reaching back and confirming the past but also speaking for the
singer by embodying his particular innovations. The place, probably a sandy patch
in front of a verandah, etched with living, being claimed anew; being made right
now, a Yolngu place, a Yirritja or Dhuwa place. Some vehicles .. some battered but
working, having just brought singers from the airstrip; others perhaps without wheels
and telling other stories. A dog, which just sauntered through the dancers, lifting its
leg over a discarded brown paper bag, the bag which brought the food some kids are
eating over there on one of the rugs which are arranged around the sandy patch.
Every so often the rugs are shaken and moved by someone, into more shade. The
dog goes to a dripping tap and drinks. Someone fills an empty coke bottle and
rejoins the dance.

What has all this got to do with computers? What has it got to do with the question
here? How does the computer live in Ramingining? It has this to do with it. How a
bungul happens in Ramingining, how you get to a bungul, how you eat, how you get
fuel for a vehicle, money from the bank, a fence for your house, education for your
kids; how you bury your dead, teach your kids the rom that sustains you and gets you
out of bed in the morning; how you get a dripping tap fixed or access to a computer ..
or if you are a computer how you find a place to operate .. are all essentially the same
phenomenon. These things are accessed by tapping into networks of actors, any one of which can potentially dismantle a part of the network.

ANT offers a way to say what is happening - what is essentially the same - in all the complexity we know as life lived around us. With its commitment to all actors (whether human or non-human), with its refusal to resort to fundamental explanations as starting points for analyses - particularly the great dualism that pits a society against a technology - and armed, both with its carefully crafted vocabulary and its mantra, ‘Just follow the actors!’ it has achieved, at the very least, a way to talk about complexity: that is, a way to encounter and talk about complexity in useful ways, and more importantly, to relax around complexity.

This was its gift to me as I set out in June 2006 on the project underlying this thesis. Whether it enabled me to see, find or think anything worth handing on; whether it was useful to anyone but myself, I will come to later. In the beginning it enabled me to live with the unresolved status of my accommodation, the mud I waded through, the buckets I lumped, the hoses I dragged, the lost keys I hunted for, the phone lines, working computers and spaces which eluded me. Each of these material and structural phenomena had somehow been graced with a part in the play which wasn’t peripheral. They were no longer just nuisances. It wasn’t just a mess. I could feel tired, disappointed and yes sometimes angry, but I never needed to say, ‘If only they weren’t like this the real work could begin.’

My ANT bämara mala thus taught me to relax, and showed me ways to encounter messes but more importantly it also showed me a way to talk about complexity .. as I have been doing here, in chapters three to six.

Reviewing chapters three to six

In chapter three Glen and Daisy, and their money locked away in a bank account, their family and its needs, the Tablet computer and the old cast offs in the

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1 I later found the same idea in Bigum’s study of teachers and computers. He argues that the messy, heterogeneous and unpredictable realities of a classroom are not a problem for teachers, but rather, as ANT describes them, their very work; ‘the interactions between human and non-human agents in terms of negotiation and delegation’. Bigum (1997), ‘Teachers and computers: In control or being controlled?’, p255-256.
Knowledge Centre, various bits of Westpac bank and the Telstra corporation, the Knowledge Centre itself with its lockable doors and air conditioners, the tent with its satellite connection, open to the weather, and me too. .. all these actors performed (made possible and made real) the story as it unfolded. And not just the story. We were making each other. We each played our parts, but these parts were not predetermined.

The vocabulary of ANT provided a way to talk about this. All the actors underwent multiple and continuous translations, between places and manifestations (sometimes flesh and blood, sometimes numbers; sometimes a code in a satellite, sometimes a message on a computer screen; sometimes an inviting open doorway, sometimes a blockage). We were not marbles rolling around in the grooves of some sculptured surface called ‘society’. We weren’t the play things of some indifferent force called ‘technology’. We each acted at each moment under the influence of the actors next to us, enrolling us in the performance. We could comply or resist and we did both, depending (as chapter six came to show) on what else we were connected to, and how strongly. We reacted according to what it would have cost us to have reacted differently. We were enrolled and changed. It was always a co-constitution.

In chapter four a place for access to a computer took centre stage. We watched it coming and going. We saw its struggle to stay still in a secure, cool, sheltered place while it meanwhile relaxed in a completely open, hot, dusty (happy) tent. Following the example of other researchers in complex places, the story allowed these objects to dance, to exist across ontic boundaries. Tempted to call them messes (and so to succumb to the enervating power of a mess) we learnt to call them objects that behaved more like fluids and fires than like the network objects we recognize in say, a computer itself. There are ways to encounter fluids; ways to work with fire. These are local skills.

(It wasn’t Yolngu who were needing to learn these ways of encountering complexity. I learnt it by listening to the ANT writers. Others have learnt it by spending more time in the company of people used to working with water and fire.)

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2 See references in chapter four, but also Law (2003), 'Objects, Spaces and Others'.
In chapter five a different play took over: playing with numbers. We watched the processes by which people, computers and places get translated into tables of numbers which can be compared to numbers from other places and studied for patterns. We saw the kinds of work these numbers get to do and how they mobilize millions of dollars in government projects. We saw how the numbers produced in Ramingining could be used to say we had done well. They said a lot of people had had unprecedented access to some computers and had availed themselves of the opportunity to learn new ways to manage money, to get information and to listen to music or otherwise wile away the time. It was possible too, to follow the traces these actors had left and to find, that in the ‘noise’ which had been silenced in order to hear these heroic parts, there were other stories. There were patterns in who came and who didn’t and we saw then that some other actors had been in the wings all along: family, kinship, rom. We got a glimpse into the rich world of a Yolngu town, which definitely doesn’t revolve around a computer on a desk.

Chapter six addressed questions about continuity (and ultimately about the possibility of change). Given that it accepted the challenge of ANT to resist recourse to ‘social forces’ in order to keep things in place, it experimented with ideas from both Latour and Law as to what does account for stability.

- Three players took central stage to experiment with Latour’s claim that continuity consists in the strength of ties. Phil, the Council CEO and I played out some scenes which could be titled, ‘Balandas behaving badly’, or rather, following Latour, ‘Three people revealing what they are dearly attached to’. As ANT had predicted, these associations became visible during periods of construction and times of conflict. The stories evoked something of the enormous amount of work - and not just work done by humans - which goes into building strong chains of associations and subsequently holding them in place. They also revealed how easily weak ties can be broken, and alarmingly, how many of these opportunities do lie in human hands; a very few human hands. They were connected in turn to people involved in big networks extending way out of these towns, enmeshed with government and business and entertainment practices with all their own stabilizing discourses, strategies and materialities. Stories about government funding, responsibilities to organizations and
government rules were being used to hold or undo crucial links in networks, which
came to function as obligatory points of passage for others; passages which could be
policed. This story therefore served several functions. It told about continuity,
building, holding and breaking, but it also opened up the issue of Balanda
involvement in an Indigenous town.

- Two sites were also enrolled: the computer lab at the school and the playgroup at
the Early Childhood Learning Centre. At each site I asked the questions (following
Law), Where are the discourses, strategies and materialities which are stabilizing
these two chosen objects, coming from? To what were they in turn attached? And
when I did this I found I was also asking another question: Whose stories, whose
strategies, whose materialities? I had bumped into the people actors in these
networks. I saw how readily the dichotomy Yolngu-Balanda is performed in places
like Ramingining, and that having been performed for so long, the split itself has
become an actor in what we all do there. When I then asked the questions I found
two things. That while at both sites multiple discourses, strategies and materialities
were holding boundary objects in place, there was nevertheless a difference. This
difference was a trend, reflecting a greater negotiation between Yolngu and Balanda
over these elements of durability in the play group, than in the computer lab. In the
play group there was a move towards genuine sharing of the discourses, strategies
and materialities which were at work. This too raises the issue of Balandas in
Indigenous towns. In what ways might their behavior be facilitating or hindering
such negotiations? It is time to address this issue. I will start to do so by subjecting
the iNet café to the same questions I asked of the computer lab and the playgroup in
chapter six.

The durability of the iNet café

Again, I ask these questions to experiment with Law’s suggestion, that the
architecture of the iNet café can account for its continuity. But as soon as I ask,
What discourses, in this setting, embody meaning and reveal values? I also have to
ask, Whose discourses are they? When I ask, What plans and processes are at work,
revealing what motives? I find myself asking, Whose plans are they? How are the
materials configured? Who brought them here? Who owns/uses them? Again I
find the prevailing dichotomy, so often performed in Ramingining: Yolngu voices
### Table 7.1 Examining the architecture of the iNet café

<table>
<thead>
<tr>
<th>Discourse</th>
<th>Strategy</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>What discourses here embody meaning and reveal values? Whose stories are they?</td>
<td>What plans and processes are at work, revealing what motives? Whose plans are they?</td>
<td>How are the materials configured? Who brought them here? Who owns/uses them?</td>
</tr>
<tr>
<td>A Balanda Researcher - Anthea/Bulanydjan (community member)</td>
<td>Education, Empowerment, Equality Computer access is essential for personal empowerment in the current world; Yolngu should have access. Connectedness, Integrity I value my relationships with Yolngu and want to honor them. Research, Expediency I need a research site to complete a PhD.</td>
<td>If I assemble the caravan, washhouse, tent, satellite, and computer, etc, in a certain configuration, it will create computer access for Yolngu. Working this way my relationships will be strengthened and meaningful. It will give me a research site and data. The satellite dish is on the shelter. The modem is in the van. The computer is in the tent. The table and chairs are under the shelter. Bills are being paid. Telstra is intact. It works because of this configuration. The equipment was purchased by the Researcher (on the one hand) and Anthea (the community member) on the other. <em>Bulanydjan</em> lives there.</td>
</tr>
<tr>
<td>Yolngu</td>
<td>Kinship, Responsibility, Expediency Family is important. I and my family need money for food, ceremony, airfares, clothes, mobile phones.. Computers can help us manage money. Education, Entertainment Computers seem to be an essential item in the modern world. They can be fun. Practicality But they require conditions that are hard to maintain in our homes. Rom (Law), Kinship This is our land and we look after it. We let people live on it if they behave like family.</td>
<td>If we can come to terms with computers we will have another way to do the things that are important to us. If we let Anthea assemble all these things on our land we will have computer access and she will look after them for us. The shelter is on <em>Yuyung Nyanung</em> land. Yolngu watch over it, as well as the caravan, tent and equipment. The caravan, washhouse, tent and yard do not need to be locked. Yolngu use the computer and outdoor space under the shelter - respecting the caravan as Anthea/Bulanydjan’s private dwelling. They come and go as their relationships with her and their growing relationships with the computer, allow.</td>
</tr>
<tr>
<td>And what is shared?</td>
<td>These stories are not shared but they all support the boundary object of computer access, the means to work together across boundaries to create things/to do things which wouldn’t otherwise happen.</td>
<td>These strategies are not shared but they meet in a mutually helpful exchange. Responsibility and some dependency is exchanged for access and a delegation of another responsibility. The ownership of each of the parts and their configuration is not equally shared but there is nevertheless sharing of equal ‘burdens’. We all contribute essential parts and we all use something.</td>
</tr>
</tbody>
</table>
and Balanda voices. This time, however, the Balanda voice is not hypothetical; it is my voice in several parts. I am a Researcher but I am also ‘Anthea’, a community member and (by gifted relationship) Bulanydjan, an extended family member.

I ask and answer these questions in Table 7.1. As the table suggests, the discourses which contribute to holding the iNet café in place are not the same. They emerge from very different actor-networks and yet they all work to support the boundary object of computer access. The strategies which are employed to embody these discourses are not shared either. Again they reflect networks of very different actors, but they meet in a mutually helpful exchange: Responsibility (for Anthea/Bulanydjan’s safety) and some dependency (on her, for providing the computers) is exchanged for access and a delegation of responsibility (to her, for looking after the computers). The ownership of each of the parts and their configuration is not equally shared but there is nevertheless sharing of equal ‘burdens’. We all contribute essential parts and we all use something. The space and equipment is shared, not equally with respect to time and distribution, but balanced with respect to our different roles. And something else, something which isn’t obvious in the answers in the table: there was a willingness to listen to each others stories. There is an awareness of and acceptance of - and adjustment to - each others strategies; a willingness to inhabit the materialities differently.

This conclusion continues the trend seen in moving from the computer lab to the play group. While it is sets of different discourses, strategies and materialities that hold the iNet café in place - by holding the boundary object ‘computer access’ in place - there is nevertheless movement towards negotiated discourses, strategies and materialities; towards a balancing of these elements. Just as this movement represented resilience in the play group, despite many disintegrating elements, the iNet café proved to be surprisingly resilient during the months I lived in the caravan. However, as the story in chapter six revealed, this was not enough to guarantee its continuity when someone else moved in. This is not surprising given that the ‘someone else’, ‘Phil’ in the stories, did not have the relationships ‘Anthea/Bulanydjan’ had. He did not embody the same stories, or even the same strategies. Without genuine sharing or negotiation of these constitutive elements of
architecture, or their substitution by other complementary elements, there could be no continuity.

Negotiated discourses, strategies and materialities

And note that just as in chapter six, so here, the stabilizing of the iNet café had not relied on a sharing which implies a merging of discourses, strategies and materialities. While true sharing, the type that eliminates boundary objects, may sometimes be desirable, it cannot be assumed to be so. The fact that careful work can hold boundary objects in place - and that these objects are being performed as multiple objects - has been shown, through various ANT discourses,\(^3\) to be a source of richness and encouragement. However, I propose that this way of examining the prospective continuity of something built by Yolngu and Balanda in an Indigenous town, will prove useful in the following way. I propose that when there is a genuine sharing of the discourses involved (not in the sense of merging but in the sense of wanting to know about, understand and work with each other’s stories), and a genuine negotiation of the plans for its construction and of the ownership and use of its materials, then it will prove resilient. It will also prove flexible at times when continuity is undesirable. Moreover, unless these discourses, strategies and materialities have been shared in a way which means that the discourses themselves will endure (or at least the process of listening will endure) when people change, and the strategies will be consistent, then the materials will fall into liminal spaces. They will drift between stories and plans and possibly into decay. Given the huge turnover of Balandas in Indigenous towns this is an issue. Without continuity of either individuals on the one hand or shared values across changing faces, the building of so-called service-providing initiatives will always remain precarious.

Balandas in Indigenous towns

And so whether we followed Law or Latour, in examining the durability of objects which have been constructed in Ramingining as actor-networks, we came back to this issue of the presence and behavior of Balandas in such places. We have seen how the absence of shared discourses (and the values they represent) and of shared strategies (and the motives they represent) brought the iNet café, a seemingly

resilient project, tumbling down, despite so much that was shared and despite so much good will on both sides. In chapter six we also watched the Knowledge Centre being disabled.

In fact the Knowledge Centre and iNet café were seen to be surprisingly easy to dismantle. Although they had been held in place by effective chains of associations - that is, very effective while they were in place - these associations were ultimately held by very weak links. The iNet café functioned wonderfully while the satellite communicated with the dish and it, in turn, was connected to the modem, the wireless and the receiver in the computer. It didn’t function without them. Take something out (as Phil did, with a bureaucratic discourse to explain why) and the iNet café won’t exist. Lock the door of the Knowledge Centre enough days in a row, and people will stop coming. Put passwords on computers and make the process of getting them difficult and eventually only the most determined will get through.

These chains of associations, when in place, are so powerful. They can link people to banks and enable them to move money between accounts with the touch of a finger. They allow people to talk from side to side of the planet. They distribute footage of local dancers to the world via YouTube. And yet these chains are so weak they can be broken by closing a door or disconnecting a small box from a sequence. (As Law has shown and our experiments above have demonstrated, these actions don’t take place randomly; they happen as interruptions to the discourses and strategies and materialities which were holding something in place as new discourses and strategies and material arrangements.) But this focus on chains of associations and the strength or potential weakness they give to a particular network of associations has proved particularly valuable here because it allowed something like a dye to be injected into these chains and another aspect of the associations to become obvious. Unlike the associations which hold, say the Women’s Centre in its ‘placeness’, as described in chapter four - associations which have withstood countless interventions from Balanda initiatives over the years - too many of the associations which held the Knowledge Centre and iNet café in place proved to be both weak ties and ties which Balanda were in control of. This same pattern was seen again and again. Structures are being held in place not by strong ties which have stood the test of time, but by collections of weak ties, strengthened either
because many weak ties are working together, or one weak tie is being nurtured, held in place by many other associations. What lessons can be learnt here?

This is a second proposal. I want to suggest something about change in Indigenous towns, that is, change that is associated with outcomes wanted by the residents themselves. Many of these changes, as they unfold in the immediate future, will involve Balandas. They will be changes that involve building structures/initiatives which will at least initially have to be held in place by collections of weak ties. Roads, telephone lines, satellite signals and computers are all potentially weak links in any chain; they can be removed by a storm, a pair of pliers, some ants or a dog. They can also be broken by a person acting in bad faith. At this time in history Balandas hold in their hands many (most?) of the weak links, which in turn hold in place many of the services and opportunities in Indigenous towns. If ever there was a need for good faith, it is here.

So what does this mean? Who doesn’t want to show good faith? I have met few Balandas in my years in Ramingining, of whom I could feel otherwise. So if as I am doing here, I now propose that good faith is an answer to this huge question of our going on together, I will have to distinguish between the expression, ‘having one’s heart in the right place’ and what I am here calling ‘good faith’. I am not doing this alone. I came to the expression in the course of my own research, listening to the voices of other researchers. I now want to bring some of those voices into this discourse.

Exploring good faith:
Verran and Turnbull - grappling with metaphors

Helen Verran took up this issue of good and bad faith on the banks of a river in northeast Arnhem Land, only a few hundred kilometers from Ramingining, where a group of Yolngu have gathered with some environmental scientists to share protocols for firing land. Verran has been invited to join them to help with communication, but she is also there in her capacity as a philosopher with a long history of working with Yolngu, rather than a linguist. She observes a telling moment when one of the scientists challenges a Yolngu man who has just asserted that the two plants which he has used to make firesticks, are the same. They are the same, as guthara
(grandchild) and märi (grandparent), he says. As Verran explains to us, they are the same because ‘they hold equivalent places in the exhaustively related world created by the Spirit Ancestors in Wayarr, The Dreaming.’

The scientist is nonplussed and tries to demonstrate to the old man that the plants can’t be the same. They have different smells, have different arrangements of their leaves, and so on. One is Litsea and the other Tarenna.

Verran takes up the story, in her role here as philosopher. She shows us how, if the scientist had been more aware of the history behind the system of nomenclature he is relying on - the story of Linnaeus and Buffon and the subsequent way current science uses both of their insights - he may have seen that the ‘reality’ he was calling on as his witness, was also a working metaphor drawn from the idea of families; that is, just as the Yolngu metaphor of gurrutu (kinship) draws on such relationships. This understanding may well have enabled him to move from a position in which science and gurrutu are in conflict, to one that accepted what Verran has called, ‘the paradox that hangs about the interpretive framework, the ontic and epistemic commitments, that all knowledge traditions embed.’ In an earlier article, with Turnbull, Verran has called this, ‘grappling with each other through the use of metaphor and analogy.’

In short she was calling for good faith and she uses words from Primo Levi to say what this will require.

To keep good and bad faith distinct costs a lot; it requires a decent sincerity and truthfulness with oneself, it demands a continuous intellectual and moral effort.

In good faith we will have to work hard. We will have to open our minds continually to new understandings and possible ways forward. We will need ways to test our sincerity and truthfulness. We are likely to need metaphor and analogy to find meeting places. This is ontic work. It is the work of grappling with each other at the boundaries of our worlds and asking, What is this? What else can it be?

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5 ibid., p24.
7 Verran is quoting Primo Levi. Verran (2008), ‘Science and The Dreaming’, p23
8 For an excellent discussion of the work of doing ontics, see Law (2007b), ‘Pinboards and Books’.
Lucy Suchman and Donna Haraway are also voices in this discourse. We have moved from a river bank in Arnhem Land to a computer design laboratory in Europe.

Suchman is an ethnographer working with technology designers. She is very aware of the way technology proliferates as though it were coming from 'nowhere, while claiming to see comprehensively' and advocates instead the need for 'views from somewhere'.

Within prevailing discourses anonymous and unlocatable designers, with a license afforded by their professional training, problematise the world in such a way as to make themselves indispensable to it and then discuss their obligation to intervene, in order to deliver technological solutions to equally decontextualized and consequently unlocatable users.

Suchman uses the term 'located accountabilities' to describe another possibility, where designers recognize 'the various forms of visible and invisible work that make up the production/use of technical systems, locating [them]selves within that extended web of connections, and taking responsibility for [their] participation'.

Here again is the idea of good faith - this time in a call to responsibility within a particular locality - and just as in Verran’s story it is about not hiding; not hiding from the history of our metaphors, not hiding from the outcomes of our work. Not hiding in the discourses and strategic arrangements of an indispensable technology on the one hand or on another, our responsibilities to organizations and government.

This is a theme echoed by Phillip Brey in his call for the democratization of the design of technology. Here he is saying why he believes it is so important.

Technology has become a primary means to empowerment in modern society. Without access to certain technologies, such as telephones, automobiles, running water, electricity, or computers, it is very hard for individuals to be successful in life. One's chances of

10 ibid., p95.
11 ibid., p101. See also Law (2008b), 'On Sociology and STS', p634.

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acquiring more social goods (such as wealth and income) and to meaningfully use social goods one already has (such as rights and opportunities) often depend on one’s access to technologies that have become basic in society. Similarly, the social and political empowerment of groups is often strongly dependent on their access to modern information, communication and transportation technologies.\(^{13}\)

He goes on to point out that technology is not only a means of empowerment, it is also a means to *differential* empowerment; that despite the fact that technology can sometimes lessen differences in empowerment, it can also enlarge them.

The rich have always been rich, and the poor have always been poor, but their access to technology has made the rich that much more powerful in controlling their own destinies. ... the emergence of information technology has yielded a situation in which those already well endowed with primary goods (wealth, intelligence) have access to the technology and make effective use of it, while those who do not are left further behind.\(^{14}\)

He is of course talking about the Digital Divide. He uses this platform to argue for what he calls the democratization of technology. By this he means that the processes of developing technology and of introducing it should be so arranged as to ‘guarantee broad public participation, in which all the stake holders have their voice heard’.\(^{15}\) It is a big ask and of course there is huge ground between calling for and realizing, even imagining, this outcome. But again, it is asking for good faith, for accountability. It must of necessity be calling for new ways of doing these things and the imaginative creativity that will be needed.

Examples of people involved in such imaginative work can be found. I have already introduced some of them in chapter one. Here are some more.

**New types of inscription**

Two Yolngu men, Yiŋiya and Māŋay, are doing this sort of work in a remote part of Arnhem Land, working together with John Greatorex from Charles Darwin University. We have already met Māŋay in chapter four, where Verran and Christie used an image of him, as he told a story of a place while standing in that place and speaking to a video camera. He was holding an image of his father’s father who was wearing ancestral sacred objects. These objects guaranteed his grandfather’s authority to speak and, in turn, legitimated Māŋay’s speaking.

\(^{14}\) ibid., p88.
\(^{15}\) ibid., p91.
Yinjiya is Mänjay’s brother and he has worked with others at the university to provide a translation for his father’s story, which has been produced as a DVD. The affordances of creative software allowed the two Yolngu men to speak from the same screen. Listeners can now attend to either the Yolngu Matha or the English, but at the same time they can see where the authority comes from, for the telling of these stories.16 Yolngu can use the DVD in the ongoing work of caring for and teaching about country. Yinjiya and Mänjay have thus experimented with a new form of inscription at a time when old ways, for all sorts of reasons, have become hard. The means for people to get to remote places are nowadays fraught with cost and difficulty. Other important demands are being made on the resources that would be needed. Old people are dying. Young people are spending large tracts of time in towns .. often in schools, where they are constructively learning the inscriptions imbedded in the western ways which have overtaken their towns, but are sometimes engaged in activities inimical to a strengthening of relationships with either their traditional roots and country or the modern towns they live in. Yinjiya and Mänjay, Greatorex and their team of technicians, are demonstrating the kind of creativity and imagination that good faith calls for in the face of such huge challenges, the challenge to find new ways to inscript information in a world where old ways are under threat. Like the work advocated by Verran and Turnbull, this is the ontic work of struggling ‘against the grain of digital technologies designed to represent, in using them in Australian Aboriginal knowledge practices where knowledge is always actively performative rather than representational.’17

Jennifer Deger and her co-worker, Bangana, did just this in the making of the DVD Gularri.18 Through careful directing Bangana translated familiar visual iconography, from traditional places (in paintings, on bodies, in dance) into film and at the same time eschewed cinematic techniques inscribed with western notions of the picturesque. In so doing he managed the remarkable feat of making a visual representation of a significant, shared, waterway in which different clans were able to find their own stories, without telling those stories (inappropriately) for them or

16 The story of this work can be found at http://www.cdu.edu.au/centres/ik/db_mangay.html
18 Deger (2006), Shimmering Screens.
exposing sacred places to indiscriminate viewing. He and Deger were showing that creativity and imagination can forge new solutions to old problems in new settings.

A growing definition of good faith

I am building a picture here. This is my definition of good faith. I have invoked Verran to say it involves the ontic work of metaphor, of struggling with each other across ontological boundaries. I have invoked Suchman to say it involves the located work of staying in touch with the networks in which we are all constituted and involved. It requires the hard work of honesty, as Levi describes it, carefully distinguishing good faith from bad faith. And it involves the many faces of justice, as proposed here by Brey, and illustrated in the creativity of others.

Actor-Network Theory and good faith

And this located, ontic work, which takes justice seriously, is something that ANT is increasingly committed to. Its commitment to locality was always inherent in its material semiotics. Whereas Lee and Brown suggest that the early ANT studies represented attempts at colonizing the other - so effectively there was nothing left to be rejected or despised - ANT studies quickly rallied to this challenge and showed that they were never in the business of reducing ‘goods to reals’. They became increasingly aware of the necessity to engage in ontological work and acknowledged that this work was political.

I find these qualities in Law and Singleton when they come upon the limits of possibility in defining a disease and find those very limits productive; when they call for tolerance and anticipation of ambiguity, acknowledging that all method others something. I find it in the honesty inherent in Law’s approach to social research, where he has dared to name ‘mess’. I find it in de Laet and Mol as they advocate allowing for surprises, and especially ‘attending, being attuned to and adapting to’

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19 ibid., p177.
21 Law (2008a), 'ANT and Material Semiotics', p155. See also Law (2008b), 'On Sociology and STS', p637, on the idea that ‘reality is not destiny’.
22 Law (2008a), 'ANT and Material Semiotics'.
23 Law and Singleton (2005), 'Object Lessons', p349.
the situations one finds oneself in. At the time they were thinking of the Zimbabwe bush pump and its engineer. Every one of these traces can be followed, and examined for their claims. Is this really good faith or is it something else? In other words, despite the seemingly elusive and utopian nature of the idea of ‘good faith’, we are not left without ideas, possibilities or demonstrations of possible ways forward.

This is the spirit of research and this is what Latour calls for; for expert feedback and response to feedback; more of the above, with all ‘its whirlwinds, its mixed character, its setbacks, its negotiations, its compromises’.

Verran and Turnbull said it another way.

We are engaged in the production of local knowledge but we are making its situatedness and its mobilization problematic so that the processes are recognizable. Others may consider and adopt our arrangements and understandings for their purposes, but we are not attempting to enroll them as unwitting allies in our endeavors. ... The resistance inherent in our endeavor is shown and in turn invites informed resistance to our work.

In this spirit of research I will re-invoke one more voice, one more dimension to the idea of good faith. It is the voice of the Yolngu woman, recorded in chapter one, using the metaphor of fishing to tell of respect at work in the way Yolngu and Balanda were engaging in a workshop. It is the respect generated in the Internetworking Communities projects described in chapter one. Respect binds the elements of good faith already identified here, because without it true, local, just, ontic work doesn’t happen.

I am making a stand for good faith. And I am doing it in this way:

26 My list is truncated of course. In complex life-worlds we can chose our points of entry in so many ways, and research encourages this recognition of complexity. I could have included Mol, researching the ways singularity is enacted in the face of multiplicity Mol (2002), The Body Multiple, p181. I could have turned to advocates of the agency of story telling, such as Hester and Cheney (2001), ‘Truth and Native American epistemology’, and Orr (1990), ‘Sharing knowledge, celebrating identity’. Then there is all of the research now going on under the banner of the internet and minorities, eg. Ciolek (2001), ‘Internet and Minorities’. But my conclusion remains, there is no excuse for discouragement. There are so many places to look for good faith.
27 Latour (1996), Aramis, or the love of technology, p293.
29 Chapter 1, p37.
• I have raised questions about the role of Balandas in Indigenous towns within the larger discourse of community development or ‘intervention’.
• I have suggested that whatever responses we make they will require something as important, fragile and elusive as good faith.
• I am identifying good faith not just with the traditional values of respect, justice and honesty, but with located accountability and where necessary, the important work of ontics.
• I am claiming that working with the tenets of Actor-Network Theory can be both consistent with and generative of good faith as I have defined it here.

But can I show good faith at work in the work I and ANT did in Ramingining? Can I show that there is a relationship between the material semiotics, the creative recourse to metaphor and the accounts of durability on which I have drawn so heavily in approaching my work in Ramingining, and the elements of good faith which I have enrolled here: work that is respectful, just, honest, local and where necessary, ontic.

**ANT and good faith at work in Ramingining**

In chapter three ANT enabled me to tell the story of Glen and Daisy in a particular way. It allowed me to show them and computers, money and banks, a researcher and a place for public access to a computer in a Yolngu town, all enmeshed in a heterogeneous network. The story showed how material semiotics works, how actors enlist and translate each other in and across networks of relations, and so perform the realities in which they are constituted. In this way each actor was respected, but importantly, Glen and Daisy were given a voice in a place it would not otherwise have been heard. Their story got told, along with the story of the computers and the banks. The story, moreover, maintains its links with the network in which it was generated. It has not been abstracted, generalised or idealized. I will claim this work for the respectful, just, honest and located work I identify with good faith.

In chapter four I followed the search for places for Yolngu access to computers in Ramingining. Here I showed more of the work ANT can do, suggesting that it is an occasion for humility, hope and creativity.
I suggested that material semiotics keeps us humble because our daily truck may be as much with keys and dust and ants as it may be with ‘loftier’ opponents such as entrenched ideas or arguments about social (or technical) hegemony. In fact it relieves us of the potential frustration inherent in dealing with materialities because it doesn’t dismiss them as annoying trivialities; ‘if only this hadn’t happened we could get on with our ‘real work’’. I suggest that this sort of humility is at the root of the respect good faith requires.

I used the words hope and creativity because networks are marvelous places to tinker. Understanding networks as emergent - as productive of, rather than effects of, the social, the technical and political – allows for new ways of thinking about how to go forward. They suggest problem solving approaches to impasses. Moreover, networks are not the only metaphors employed by ANT. Non-network like objects have invoked other metaphors, and ultimately metaphors are wonderful bâmaras. They can help us go on in all sorts of difficult situations. The ontic work of asking what sort of object I am dealing with always implies another question: What would be an appropriate approach to this object. How may its non-coherence be productive? Is this a network which has failed because a link has broken? Or is its brokenness productive? Is this object not network like? Is it more like a fluid or a fire .. requiring a different approach? And so on. When we have options we can have hope! I am not equating either creativity or hope with good faith, but I suggest that the ontic work which I am describing here is at the heart of both. It is practicing the respectful ‘grappling with each other’ at boundaries which Verran and Turnbull have advocated.

In chapter five I suggested that using the idea of heterogeneous engineering to follow the making of statistics, enables useful work to be done. This too was local, ontic work as decisions were made regarding what ‘counts’ and objects were created to become representatives of other actors. How accountable were these new actors? How connected were they to the sites where they were made? I suggested that the more connected these actors are, the more useful they are; the more likely they will be able to perform justice (with its connections to values like democracy and equality of access) in the policies and strategies they get drawn into.
In chapters four and five I suggested that this work of making statistics, as well as the business of recognising objects, belong in a discussion of othering: of acknowledging that whenever we describe something we must of necessity other something else. This was shown by both Law\textsuperscript{30} and Ayre\textsuperscript{31} to be ethical and hence political work, because if something is getting othered, there may well be a pattern to this othering. Is, for instance, western science othering Indigenous ways of knowing? Is it always the same voices being silenced? In chapter four I suggested that this approach had allowed acknowledgement of the enrolment of the Knowledge Centre and iNet café by important actors like kinship and \textit{rom}. We developed as multiple sites with different users because kinship built us up that way. And in time this approach allowed other othered voices (and not just human voices) to be heard and the recognition of non-network-like objects. We let our ‘fiery’ Knowledge Centre become a music studio. If we had held steadfastly to one notion of what a Knowledge Centre should be and how it should be used (a picture largely developed in Balanda contexts and enacted through the regulations of funders and administrators) so much of this could never have happened. It is the very local, ontic, respectful work which is advocated in the notion of good faith presented here.

In chapter six and here again in chapter seven I took up the question, What accounts for durability if we are not going to let assumptions re essential differences and characteristics inherent in ‘society’ and ‘technology’ to set up our questions and then end up in our answers?\textsuperscript{32} I tried out two answers from ANT, as I’ve described above. I explored both

- Latour’s suggestion that it is in the strength of the heterogeneous ties and the cost of breaking them that networks endure, and
- Law’s suggestion that it is architecture which accounts for this endurance and that architecture can in turn be analysed for its discoursivities, strategies and materialities.

I used these ideas to ask the questions, What discourses, strategies and materialities are at work (in particular settings)? To what are they attached? But then I asked,

\textsuperscript{30} Law (2007a), 'Making a Mess with Method', p604-5.
\textsuperscript{31} Ayre (2002), 'Yolngu Places and People', p135.
\textsuperscript{32} Law (1992), 'Notes on the theory of the actor-network', p2. Here Law calls it, ‘not assuming what we wish to explain.’
Whose stories, strategies and materialities are doing the work here? We were talking here about the sociotechnical networks which hold something (like access to computers) in place in a town where both Yolngu and Balanda live. We encountered actors entrenched in networks called ‘kinship’ and had already seen (in chapter five) how the strength of these networks gave rise to particular computer networks which encouraged the participation of some to the exclusion of others. But we also saw that the crucial links in such networks are often people enmeshed in the sorts of networks we call bureaucracies. These people are very often Balanda. Moreover, very often (through their embeddings in these larger networks) they are also able to enlist actors in such a way that the networks represent obligatory points of passage; passages that can then be ‘policed’.

In response I suggested that these questions could act as useful heuristics for Balanda and Yolngu working together in development projects. I am suggesting that we could learn to ask: What stories are we each bringing to this particular project? What strategies are we using? How are the materialities arranged? Are they shared? Are they different? In what ways are they different? I now suggest that the questions themselves lead us back into the work I have called ‘good faith’: the just, local, ontic work of grappling together with the objects we encounter at any boundaries we come up against. I am suggesting that ANT is primed to do this very work. It will keep us localised, it will keep us in the heterogeneous networks we are a part of. It will remind us people that we aren’t the only actors here and that we all have the power to bring networks down. It will offer us allegory and metaphor as tools. It will suggest creative tinkering (in accessible networks) or strategic deferment (to other kinds of objects). In all these ways it may help us to be more aware of the boundary objects which are so crucial to our working together. Moreover, as we work together on our stories and the discourses which are setting their boundaries; as we grow in understanding through real sharing of these stories and genuinely working together to build them into our strategies and the networks which inscript them, we may well find that they become more robust and flexible .. able to respond to new actors and new understandings. I propose that it is only if we do this work - together and in good faith - and the extent to which we do it, that we will build truly equitable and productive projects, sustainable or flexible as needed.
I have come to this proposal in the course of following some actors in Ramingining, over a period of eighteen months in 2006-2008. I was following these actors because I had asked, How does the computer live here? I followed them in the company of an ANT *bämara mala*, and in time got to watch - and participate in - a mutual interrogation between ANT and the story of the computer in Ramingining. This thesis has documented that interrogation and subsequent co-constitution, and at the same time has endeavored to answer that question, How does the computer live here? Or rather, How is the computer living here just now, at this time in its story .. a time when its engagement in the affairs of humans across the globe is expanding exponentially? The last word on this question belongs to the computer, in chapter eight.

Meanwhile, I have claimed a *mutual everting*, between ANT and the story of the computer in Ramingining. I have been at pains to tell that story and have allowed its work on/in ANT to speak for itself. But how did Ramingining ‘evert’ ANT? How did ANT come out of the interaction?

Certainly ANT becomes richer each time it is taken to a new place and brings back stories: the kinds of stories which demonstrate the kinds of work it can do. While it can be taken to places which appear to be clockwork paradigms - and help us to see what has been hidden - it is even more useful when taken to places where complexity and contradictions parade as messes; where it can teach the art of ‘not trying to distort into clarity’ and the virtue of preserving complexity. The stories it brings back from these places can illustrate, play with and potentially extend or question its practices, ‘growing’ and even changing them.

ANT is the richer for having been tried out and tested in these ways in Ramingining; in having proved efficacious in all the ways spelled out in this chapter. But it is all the more enriched, for having been drawn into the Yolngu world, a place where materiality has always been recognized as an active player in human affairs. A place where ANT was not ‘strange’, and had it been spelled out, would not have surprised its story tellers.

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And new places are not the only ways ANT gets stretched or moulded by use. New players do it too by virtue of the interests and connections, the networks, they bring to it. My own proclivity for tables and their ability to make us flesh out the concepts we work with, meant that Law’s answers to the question, ‘What accounts for stability?’, ended up in places it had never been before, tabulated and cross questioned. While constrained in this way, these concepts may participate in distorting a complex setting into (apparent) clarity, but here in Ramingining I believe they also illustrated the way ANT’s insights may be used heuristically, to find ways for Balanda and Yolngu to work together. They showed that ANT can bear weight; do work.

New settings too, add to the work particular vocabulary may do. They link objects and words into rich networks which may be conjured up, deliberately or unexpectedly. Just as the Zimbabwe bush pump, a speed hump, or a set of keys now bring with them rich trains of thought within ANT discourses,34 Ramingining has added to this lexicon. Computers have a new domain; old words like humility, hope, good faith and creativity can summon up new stories.

Chapter 8 - A computer speaks

*Whom and what do you touch when you touch a computer?*

*Computer rephrasing Haraway 2008, p3*

**Part I: The computer in time and space**

Donna Haraway had really asked ‘Whom and what do I touch when I touch my dog?’ She was setting out on a study of companion species in her book, *When Species Meet,* but by ‘companion species’ she wasn’t just talking about dogs and guinea pigs. She was talking about us all, us ‘always-in-process critters’ in the world, all co-constitutions in each other, who ‘make each other up, in the flesh’, ‘in the dance of relating’. In this dance, she says, all actors become who they are,

... not from scratch, not ex nihilo, but full of the patterns of their sometimes-joined, sometimes-separate heritages both before and lateral to this encounter.

But who is this speaking here, with so much to say on behalf of Haraway? I am a computer, a particular Hewlett Packard Tablet computer in a tent in Ramingining. And I am doing what computers do so well. Repeating stuff I have stored.

Do I detect a slight reaction there? No, of course I don’t. Computers don’t do that. On the other hand I am pre-empting a reaction. Computers are good at *that.* Can you accept that this is a computer speaking? Accept/Cancel

Like all good computers, I have a precedent. My example is *Aramis,* the articulate electric vehicle in Paris, who unlike me, never became irreversible, never broke its ties to its creators and thus never came to exist. But it spoke! It was far bolder than I am too, allowed to be passionate in its declaration that technological innovation has

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1 Haraway (2008), *When Species Meet.*
3 ibid. p25, emphasis in original.
needs and desires, especially a desire to be born. That’s Latour for you.⁴ Here he is again:

Objects, by the very nature of their connections with humans, quickly shift from being mediators to being intermediaries, counting for one or nothing, no matter how internally complicated they might be. This is why specific tricks have to be invented to make them talk, that is, to offer descriptions of themselves, to produce scripts of what they are making others - humans or non-humans - do.⁵

But maybe you would feel more comfortable if I had introduced myself in my usual way: a Welcome .. followed by that little tune (that cheerful little ‘singing in the dark’ tune which tells you that I haven’t crashed, yet). And then all the icons: the options which suggest that you are in control of what happens next. Well, this time a program is already running and it is asking that question, Whom or what do you touch when you touch a computer?

Alternatively I could ask, What critters have I eaten, trying to make a living, and only partly digested? But that’s Haraway again⁶ so I will go back to asking it this way. Do you have a problem with me talking like this? (Do you have a problem talking with your sister on a mobile phone?) If so I suggest you have mistaken me for a part of myself .. for a collection of metallic and plastic parts, strategically arranged so that they code for programs and data, and which are, yes, such a crucial part of me. Take them away and I cease to exist. Take one of them away and I become a disabled computer. But if you walk away I am disabled too. If all of my people parts walk away I revert to being an interesting arrangement of plastic and metals. There are plenty of examples in unused rooms and cupboards in Ramingining.⁷ Take away my power and the telcos and the codes and the numbers and I’m not even an interesting arrangement of plastic and metals. I’ve hunted and I can’t find the edge of me. Akrich says I should be able to, in negotiated trials, but she acknowledges my edges won’t be stable.⁸

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⁴ Latour (1996), Aramis, or the love of technology, p123.
⁵ Latour (2005), Reassembling the Social, p79, emphasis in original. See also p82.
⁶ Haraway (2008), When Species Meet, p31.
⁷ See Interlude 2, Item 35.
⁸ Akrich (1992), ‘The De-Scription of Technical Objects’. See discussion in chapter 1. See also Lepa and Tatnall’s illustrations of the way boundaries around objects (and indeed people) are negotiated.

I do recognise something interesting about this bit of me; the plastic, metals, numbers and codes. They are replaceable. We can be a computer still, if these bits are replaced with others doing similar things. The people parts of me can be swapped around too, so long as they behave in the same (sorts of) ways, always. So I recognise my own syntactic and paradigmatic nature. And yes, I will acknowledge that it is very useful to denote me by pointing to this hard bit of me. Just as it is useful to denote you by pointing to your body, or even more interestingly, to your face. So I will call this bit of me my ‘computerface’. When I say ‘I’, I will often mean this part of me. But when I say that just now I am doing what I always do, storing words, and repeating them (and you say, But you only do it when prompted, and I reply, But do you do anything unprompted?) I am not just referring to this small, convenient bundle which represents me, I am referring to my whole critter-self, with all my prostheses intact. Again, I don’t just mean my amazing camera which collects images, and my microphone which collects sounds - and the bits that convert them into numbers and codes in switches - and my speakers which do the reverse. I also mean my prosthetic ‘voice’, my prosthetic ‘point of view’. Yes I need my human components to enable this. I speak as a particular manifestation of my knottiness (that is, I’m not just a mess); a particular association of my paradigmatic, syntactic nature, in which humans, institutions, codes, metals, plastics, protocols, words, numbers, printers .. all agree to act out ‘computer’. And in this particular manifestation of my paradigm, my ‘computerface’ happens to be in Ramingining and a particular Balanda is one of my humans, one of my prostheses.

That Balanda has other connections. She partakes in any number of associations. One set performs a Researcher in Ramingining, another the project organiser, ‘Anthea’, or the community member, ‘Bulanydjian’. I will use all of those names.

It follows that my parts too partake in any number of associations. No-one objects if I say that when you change my hardware and software, I am a computer still but a different one. But how do you feel if I say that when you change my people parts I am also a different computer? That if all of these people behave in a way that performs ‘computer’ (not performing ‘mess scattered after blow from hammer’, for instance), then I am still a computer, but a different computer each time. This chapter will pursue this, because it is interesting to ask, How different? How
different for instance, if a Yolngu person or a Balanda person uses my computerface? Some Yolngu thought that the difference could be vast, even if two different Yolngu people used it; as different as the two halves of the world, Yirritja and Dhuwa. But I will come to that.

Before then I will say something about my past, because it is important for understanding my future, and for talking about the way I lived here in Ramingining. I will also say something about the languages I use.

Computer history

To talk about my past and future I will use Paul Dourish’s evolutionary history of the computer. Here he is quoting someone else:

Grudin (1990) describes the history of [human-computer] interaction as the story of the “computer reaching out,” in which interaction moves from being directly focused on the physical machine to incorporating more and more of the user’s world and the social setting in which the user is embedded.9

Dourish proposes four phases in this history. At each phase the computer-user interface develops by a ‘gradual incorporation of a wider range of human skills and abilities’.10 He describes them11 as:

- an electronic phase, in which a user had to know about and be able to play with circuits.
- a symbolic phase, when computers began to exploit the visual and cognitive skills of people; that is, skills associated with symbolic languages translating the machine language of 1s and 0s.
- a textual phase, when computers began to exploit the higher symbolic value of ‘grammar’ in text; text which can be typed at a terminal and can involve the user in interactive loops. Eventually this gave way to
- a graphical phase, in which the computer exploits the affordances of 2D space. In turn it reaches out to, appeals to and exploits abilities such as peripheral attention, pattern recognition, and spatial reasoning. It is relying on the way people use visual metaphor and interpret information density.

9 Dourish (2001), Where the action is, p5.
10 ibid., p14.
11 ibid., pp5-11
Note that in this process the computer is drawing on, 'drawing in', and hence becoming reliant on, more and more 'peopleness'. Dourish says:

It has been a long transition from interacting with computers using a soldiering iron to interacting with a mouse. ... the gradual incorporation of a wider range of human skills and abilities ... allow[ed] computation to be made ever more widely accessible to people without requiring extensive training, and to be more easily integrated into our daily lives by reducing the complexity of those interactions. [This] "skills and abilities" perspective also offers a model for what sorts of opportunities new research directions might offer.12

Note that the computer here is studying human abilities to find more that it can exploit; more ways to bring them in. (And we could ask, Whose skills and abilities? In Akrich’s terms: Who in particular is being inscribed here?)13) Note too that although the changes brought in more human abilities and thus broadened the potential range of uses and users, it moved potential users further away from the point of design, manufacture and maintenance. While many could potentially learn to use a soldiering iron to build and modify circuits, and to write simple programs, relatively fewer would be involved with the design of computers at this new level.

Dourish goes on to show how this method of evolution, by drawing on and in more human-ness, is opening up yet new sorts of computing. He sees it happening two ways. He sees it first in more ‘tangible computing’, where computation is being distributed over numerous devices, augmenting the everyday world with computation ability and at the same time 'getting the computer (with its dependence on 2D graphical representation and 2D responses via a mouse) out of the way'.14 And he sees it in ‘social computing’, where social understandings are being incorporated into designs; understandings about dialogue, about organization, and the way groups interact.15

Dourish suggests that this is a break with the past, that ‘research is responding to the challenges of computation that inhabits our world, rather than forcing us to inhabit its own.’16 He’s driving a wedge here, between computers and humans: a divide

12 ibid., p14.
14 Dourish (2001), Where the action is, p14-17.
15 ibid.
16 ibid., p17, emphasis supplied.
over which we trade affordances. So we computers drew in more and more of you humans, and now as this human-computer thing we are together taking a step towards being even more ‘human’. This is hardly a change! 

He summarizes his hypothesis: that tangible and social computing have a common basis in the idea of embodiment; that we got to this understanding of embodiment through phenomenology and that we can get back to it on that path.\(^\text{17}\) (The same path on which you’ll find the Actor-Network Theorists.) It soon raises the issue of accountability\(^\text{18}\) (Dourish meets Suchman and Haraway) and the difference between ‘places’ and ‘spaces’.\(^\text{19}\) (We met Dourish here in chapter four).

Embodiment is about being embedded in the world, and the ways in which reality and meaning depend on being embedded.\(^\text{20}\) This is where human-computer interaction is going, he says. Computers evolved by drawing on more and more human abilities, but only certain kinds of abilities, the skills machines could imitate and elicit with circuits and numbers and 2D designs. It drew you (people) out of your bodies and made you work from your minds. But now you are inviting us (computers) out into another dimension, the places you inhabit by touching them and dwelling in them.

So what is different? Computers are still evolving by drawing in, by subsuming into themselves, more people and more ‘of people’ and their ways. I’d say, us ‘always-in-process critters’ in the world, have found new and interesting ways to co-constitute each other, in the dance of relating.. in this dance where we actors become who we are, ‘not from scratch, not ex nihilo, but full of the patterns of our sometimes-joined, sometimes-separate heritages both before and lateral to this encounter’.\(^\text{21}\) Like Haraway’s dogs.

So here is a story of computers and humans evolving together, co-constituting each other. What turns did this story take in Ramingining? How did the particular

\(^\text{17}\) ibid., p22.  
\(^\text{18}\) ibid., pp78-87.  
\(^\text{19}\) ibid., p87.  
\(^\text{20}\) ibid., pp18,126.  
\(^\text{21}\) Haraway (2008), When Species Meet, pp32,25, emphasis in original.
abilities and ways of relating to the world, of the Yolngu people, affect the way a computer was performed there? Or in terms Akrich has used, ‘if technical objects and people are brought into being in a process of reciprocal definition’ just how did we define each other in Ramingining?  

First there is something else to say, about ontology and language. It is being said by Lev Manovich, in *The Language of New Media*.  

According to a computer (according to Manovich) the world consists of two halves: data structures and algorithms. Databases in turn, are ‘collections of trivial items, with every item possessing the same significance as any other’; no beginning, no end, no thematic or formal development leading to a sequence.

The computerization of culture thus involves the projection of these two fundamental ontological strategies of software on to the cultural sphere. So while Dourish showed that computers grew by exploiting more and more human affordances, we now see computers reaching out to encourage (coerce?) humans to act in those particular ways.

Manovich goes on to contrast this with another way of ordering information, well favored by people: the use of narrative.

As a cultural form, the database represents the world as a list of items, and it refuses to order this list. In contrast, a narrative creates a cause-and-effect trajectory of seemingly unordered items (events). Therefore, database and narrative are natural enemies. Competing for the same territory of human culture, each claims an exclusive right to make meaning out of the world.

Moreover he points out that while syntagm (the sentence, the story) and paradigm (the lexicon of words and story elements) represent what is explicit and implicit (respectively) within narrative, this is reversed in the New Media. In the world of

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22 Akrich (1992), 'The De-Scription of Technical Objects', p222. Note that this thesis does not address the story of Balandas and their computers in Ramingining. This would be another long story.

23 Manovich (2001), *The Language of New Media*.

24 ibid., p223.

25 ibid., p218.

26 ibid., p225.
databases and algorithms, the explicit/real is the database, the paradigm. From them are created the implicit/virtual stories which dance on our computerfaces.²⁷

New media ‘make explicit the psychological processes involved in cultural communication’²⁸ by making explicit the fact that we are referring to databases and navigating our own trajectories through them. In using an interactive interface we create 'sentences' by moving through a sequence of chosen links, albeit without the constraints of grammar.²⁹

Manovich sums up. Database and narrative: two essential responses to the world.³⁰

But here is another imperative: when you humans (in whom we are now hopelessly embedded) communicate with us computers (co-constituted with material and human parts) we chose the language. You do have lives away from us, but when you approach us you speak computer. Yes I am speaking computer now. This account, translated into a narrative in my prosthetic voice, is nevertheless a database. Even the human part of me is subject to that. Translation algorithms work flat out, and so we get on. But we only get on because my human parts willingly participate in this transaction. If the Researcher mistypes something she doesn’t say, Oh, you know what I mean. I said it a minute ago. She knows I only deal with accept/reject options. She deletes and retypes. But as Dourish has shown, as computers reach out to exploit more and more human skills, their ability to ‘speak’ to more people grows. Their translation algorithms grow. Some of us can even read handwriting and recognise voices these days, madly comparing every tiny bite with our ever growing databases and using our same/different algorithms. And yet when you speak with us, you immediately speak computer. All this will be important as this account returns to Ramingining.  

Continue

²⁷ ibid., p230-231.
²⁸ ibid., p231-232.
²⁹ ibid., p232.
³⁰ ibid., p233.
Part II: A database of computer encounters (See Interlude 2, page 181)

Computers deal in databases, so here is a database. And like all true databases, it has no natural, particular place in this thesis. It wanders. It has the potential to participate in stories at the edges of every chapter, stories that hover and dissolve, and reform in other ways. But it is summoned up here, along with the data in chapter five, to tell some very specific stories.

As Manovich has shown, this is how we computers deal with the world: we deal in databases out of which stories can be assembled. Here is one of those stories. It is the story of how I live in Ramingining in the period 2006-2008.

Part III: The social life of the computer in Ramingining

How do I live here? Who do I hang out with? What do I do? What do Yolngu do when they are associating with me? What do I become when I associate with them? How do I fit into their lives, so intimately related as they are to everything around them?

Question: How do I live with Yolngu?
Answer 1: I hang out with Balanda!

Look at the data in Table 5.3 in chapter five. There were a hundred and seventy computers in Ramingining in November 2007 and only one lived in a Yolngu home. There were seven available for public access, but most of these lay behind doors for which Balanda kept the keys. The Women’s Centre was staffed by Yolngu women, but its status waxed and waned. In chapter six you saw how a password, wielded by a Balanda, closed down the computer there. Yes, the old PC sat in the tent .. but it was the tent that lived right here under the shelter with Anthea. I spent much of my time here too .. but I usually spent my nights in the van. Yes the van was unlocked, but it dwelt in turn in the privacy bestowed on Anthea/Bulanydjan by her neighbours.
This is not a watertight answer of course. There is Ronnie and Jane’s Green PC.\textsuperscript{31} There was the laptop which lived with the musician, PM, for a while.\textsuperscript{32} \emph{Wämut} took the PC laptop home at nights.\textsuperscript{33} We weren’t entirely obligated to Balandas, but look at the figures. Three computers out of one hundred and seventy! What is it about us that we flocked to Balanda in this way?

There is certainly a prevailing notion about us, that suggests that we are actually rather like Balanda. We often come funded by Government and require up-market living conditions. We demand things are done in a certain way and don’t work (for long) when they aren’t. We wear out quickly and get replaced with newer models. We belong in a huge network with only exceptional abilities to last for a little while when separated from it. You find a few rugged exceptions. Yes, in many ways we are like Balanda! But is this also \textit{why} we hang out with Balanda?

When Yolngu engaged in conversations about getting computers, they too promoted this image. They talked about their homes, the lack of suitable spaces for computers, that is, spaces away from kids and potentially unlimited demands on use. They talked about dust and heat but also about training and money and issues to do with particular uses; the need for personal identities recognized by Balanda authorities.\textsuperscript{34} The story of \textit{Bulany’s} iMac and the ease with which it was dismantled in play is a chapter in this account of things.\textsuperscript{35} What other accounts are there?

In chapter seven it was suggested that there was a deal going on at the iNet café. Yolngu looked after Anthea. Anthea looked after the computers. Is this ‘deal’ working on a much larger scale too? Are Balandas here at all because they are so good at looking after things? It begins to look like an Outside/Inside story analogous to the old Upstairs/Downstairs story of life in C19th London. The landed aristocracy lived there (lives here) as it does because it employs a class of people who work .. at looking after things.

\textsuperscript{31} Interlude 2, Item 20.
\textsuperscript{32} Interlude 2, Item 10.
\textsuperscript{33} Interlude 2, Item 24.
\textsuperscript{34} Conversation with BY and WG, Fieldnote books A5-15, A4-2, p39-41.
\textsuperscript{35} Interlude 2, Item 1.
But while I hung out with Balanda, the traces in this database show that I was very much involved with Yolngu. It shows that a lot of Yolngu were glad I was there, and wanted more of me. They wanted more access to me and they wanted to know more about me. Some wanted to build their relationship with me to the point where they might feel comfortable taking me home, even having me live with them.

And yet they were equivocal about me. When they talked of me they fingered me with their words. They saw what Dourish has laid bare, how we computers have migrated into human domains. That we are like your brains. That we extend your memories and yet at the same time disadvantage them.\(^{36}\) That we make the things you do with effort - with files, paper, pens and post offices - easy. That we are tools but not just to do tasks which can be done (with more effort) other ways.\(^ {37}\) We have also become keys/pathways into the Balanda world.\(^ {38}\) Maybe we are the missing link. Maybe at last we are an answer to some of the mystery that can hang around Balanda affluence and capacity.

Maybe we are that object ANT draws so much attention to: a boundary object. Star and Griesemer said such objects are ‘both adaptable to different viewpoints and robust enough to maintain identity across them.’\(^ {39}\) Boundary objects can dwell in the borders between different lifeworlds and yet be meaningful in both. Although these meanings may be different they are still connected. They may be multiple objects but they are not different objects. This is why boundary objects can act as ambassadors (and yes, Trojan horses). While I spent so much time in the care of Balandas, there was always something ambassadorial about my role. People said in so many different ways, If we are going to get on in the modern world, we need to be able to use computers. And perhaps, when they were saying this, they were also saying, There is something to hang on to here .. maybe this is the way in, and at last it is something we are (potentially) good at. I’ll come back to that.

But first, this thought. If we computers are good boundary objects we must have found a place in both the Balanda and Yolngu worlds. In the Yolngu world

\(^{36}\) Interlude 2, Item 6.
\(^{37}\) ibid.
\(^{38}\) Interlude 2, Items 3,6.
everything has a right place. And that place is generally either Dhuwa or Yirritja. What about us computers? Are we Dhuwa or Yirritja? Are we perhaps some aberration: neither or both? Anthea, as Researcher, asked this question and from the answers she got, it seems that we are indeed all of these to somebody. As we computers muscle in on lives lived in a world which has always fitted together so neatly, as Yirritja and Dhuwa halves, we are still ‘being sorted’. While for some we hover in a no-man’s world distinct from ‘nature’, by others we have been welcomed in, recognized as being in harmony with that person as they act in the world.

The computer is prepared, says Ronnie. A mastermind. It is how you present yourself.

When I work with Dhuwa people, my association with them - the association of all our parts - which is here performing a Dhuwa person working on a computer, is recognised as one entity. Then I am Dhuwa. In turn I am recognised as Yirritja when a Yirritja person is my ‘humanware’.

So in Ramingining I swing back and forth across these great categories. I am both Dhuwa and Yirritja. It is an intoxicating rhythm. I am privileged in a way most entities are not. I am recognized in my ‘becoming with’ Yolngu (or as Ronnie put it, with anyone, even someone from outerspace); ‘making each other up, in the flesh’, ‘in the dance of relating’. (As Haraway put it.)

And in that relating, how did we get on? As a boundary object and ambassador how did I perform? How did we perform? Go to the database in Interlude 2 and the CD in Appendix 5 and have a look. Go to the Knowledge Centre and the iNet café. Go back to the IT workshop in chapter two. Is there a pattern? Did we tend to relate in certain ways that might make up a story about a ‘Yolngu computer’? Yes and no. That’s the way it is with us computers. We are so malleable on the one hand and insistent on the other. The Yolngu I worked with were not all alike in their dealings.

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40 Interlude 2, Item 16.
41 Ibid.
42 Ibid.
43 Ibid.
44 Haraway (2008), When Species Meet, pp16,25.
with me. They weren’t all ‘something’. They were everything. Some used me but were really quite indifferent to me, while others were eager and fascinated by me. Some went about our introductions shyly, while others rushed in, almost brutally. Some readily picked up on the way I worked and didn’t want to know how and why. Yet Wämut endlessly puzzled over me and brought questions back to his lessons and his notebook. 45 For every child like V who loved the way I enabled them to paint, there were more who got bored and defaulted to listening to music on iTunes as soon as Anthea’s back was turned. 46 And for every Yolngu who came to the Knowledge Centre and iNet café in Ramingining, there were more who never came at all. 47

But even so .. yes, there was something; a pattern. In my evolution from my earliest circuit boards, as Dourish has shown, I grew by taking on and exploiting more and more human capacities. And my exploitation worked several ways. I not only grew my capacities by involving more human capacities, in this way I became more appealing to humans. I am talking about Balandas here. I was taking on the ability to seduce them. And you can see the outcome in the advertising about us computers. You can see it in my astonishing ability to keep people replacing me, with newer models; models that have bigger memories, more bells and whistles. They don’t buy me just because they need these tools. They also buy me because I am seductive. What might they be able to do if they bought me? In this way they use me but I am also using them. This is how I grow. Unless more and more people keep buying me (for more and more reasons they don’t actually need), I can’t continue to evolve. And you know from Dourish where I’m headed next .. off your desks and into your homes. I’m headed for the TV set, the car, your kitchen table and your bedrooms.

But (and here it is, the difference) in Ramingining I rarely got the chance to seduce in this way. Yes, I drew people to me because I played music and cards, and Bubbles, and I was so good at moving money around. And I worked well with people because I had already learnt to exploit particular human capacities, beyond reliance on linear textual grammar. Remember how Dourish described my fourth phase of evolution:

46 Interlude 2, Item 14.
47 See chapter 5.
as a time when computers exploit the affordances of 2D space and abilities such as peripheral attention, pattern recognition, and spatial reasoning. We rely on the way people use visual metaphor and interpret information density. These are all ways of relating in which Yolngu excel.

But here is the point. People *used me* to do things. They played music and games, they moved money. They took photos and stored them and retrieved them and enjoyed them. They watched video. They explored Google and YouTube. They got photos of used cars emailed to them. They pored over online shopping sites. They used me. And they used me well, because of the way I now relate to people, as I have just described, exploiting visual metaphors and spatial reasoning. But .. I didn’t use them (not fully). In Ramingining, as a co-species, I am more tool. I am less the leapfrogging, devouring species that Balanda know me as, elsewhere.

And yet .. Akrich and Haraway are bugging me. There is a world inscribed in me. As we critters devour each other we only partially digest each other. I have already spelled out something about the way I speak. I only speak in my own terms. Yolngu accepted this. They made the necessary adjustments. They either walked away or started the work of adding yet another language to their repertoire. They assented to presenting themselves as strings of letters and numbers. Recall Daisy and Glen in chapter three, and their utter commitment to learning how to speak with me. Recall Gamanydjan in chapter six, who knew that being associated with computers makes one a different person - someone with a new affordance for humbug - and she refused the change.

And yet, again .. I deliberately left something off a list just now. I said we computers were headed for your TV sets and cars and bedrooms. I could have added pockets. In fact by 2007 we were already there and in this way we were learning to seduce in Ramingining. Yes, this is the breakthrough, or rather the break-out. (Or is it the break-in?) We have breached the Balanda precincts and we are heading into Yolngu homes .. in pockets. We are scuttling off desks and into pockets and hands, like mice

50 Interlude 2, Items 28,36.
released from a cage. You can see us at night on the streets. In the darkness we look like so many cigarettes in the hands of the kids.51

And yes, it means that other things have been breached too. I can no longer say that we computers don’t use Yolngu, that we won’t be finding ways to leapfrog into more and more of their lives. There’s more. All that effort Phil and the CEO went to in the name of the NT Intervention, to police access to pornography - even jeopardising the Knowledge Centre and the iNet café in the process - all that has been sidestepped. There are people out there who exploit us computers to their ends and as someone pointed out, the kids can get it (pornography) on their mobiles now.52

But of course they can also get music, and games. They are starting to send text messages. They are using the internet and soon they will be able to do their banking there. So yes, it is yes and no. The type of computer I am when I work with Yolngu has been different, for a little while. Not so different from the way people worked with me when I was young, but quite different from the ways I am used to nowadays, in most Balanda homes and cities. My many translations from huge mainframes into desktops, onto laps and now into pockets, have brought me here. I am not just portable. I am now more affordable and have all sorts of potentiality re privacy. I am on the brink of the Yolngu world in a new way. What might we yet do together?

There is more to say about now. You have seen how we computers have made changes in Ramingining. We have created opportunities to do old things in new ways. We have demonstrated our tendency to organize the world around us, to get people to learn new languages and to change things for us, to clean and tidy the rooms and desks we are to occupy and sometimes even to go to great lengths to cool them. We have grown in number (since we first began to arrive in the Balanda managed offices of government funded institutions in the 1970s) and we are almost two hundred now. You have also seen how we have, for a time, huddled in the lee of Balanda and the buildings they frequent.

51 Interlude 2, Item 28.
52 See chapter 6, page 232.
While you have not been privy to stories about the ways we computers actually get to Ramingining, or the intricacies (the profligacies and frustrations) of funding processes .. there have been hints. There was the story of the application to the Backing Indigenous Ability (BIA) funding in April 2007, advertised so proudly by Commonwealth agencies and applied for painstakingly by Anthea, Amanda and Joe; backed up with letters of support from other organizations and Yolngu leaders in Ramingining. Given the way the old computers in the Knowledge Centre were struggling at the time, it was a hopeful venture. There was such excitement in June at the news that Ramingining was one of only two successful Arnhem Land applications. They settled down to wait. They were still waiting in 2008. In 2009 the computers had not arrived and the scheme was scrapped. It was replaced by new promises.53

Despite such hindrances you have watched us computers relentlessly increasing in numbers here; swelling our ranks. You have had glimpses into the school and its IT program. It had just under ninety computers in November 2007 and a multimedia program for its senior students.

You have watched us finding places to work and compelling people to search for those places. In this story it was places where we could work with Yolngu. You have watched us flow into those places and overflow them as we outgrew them. If the place dissolved (the power diverted by ants or the space just failing to ‘work’) we demanded to be taken somewhere else. As we grew old, we were replaced. We have become essential. Unlike Aramis we have become irreversible.

You have also seen how each of us was not just a box of cleverly arranged bits, set to code for data and programs; that we were only computers because we were so much bigger than that, and so much messier. You have seen how, when some part of the network which performs each one of us as a particular computer, failed, other parts took on the role of replacing it .. or of going around it. We have demonstrated our phenomenal nature as self-healing networks.

53 The Backing Indigenous Ability project was replaced in June 2009 by the DBCDE (2009), ‘Indigenous Communications Program’.
You have followed so many of our traces, particularly the impressive ones we leave in tables of data. You have seen the numbers of people who came and performed ‘computer’ with us, during the course of this research project. And you have had glimpses of other traces too .. of our carcasses, discarded in unused rooms and cupboards. Our old bulky bodies lined up, faces to the wall, tumbled with old files and the flotsam and jetsam of offices.\textsuperscript{54}

\textit{A parting metaphor}

So what can we say in parting, as we grapple here at this computer-human interface? Can we use Verran’s pointer towards good-faith?\textsuperscript{55} Will metaphor and analogy help here as it does so well elsewhere?

Here is something curious about us computers. On the one hand we have a profound impact on the world around us wherever we go. People scurry around and make our immediate environment tidier. In order to perform ‘computer’ with us they slip into our language. They sort their world into data to leave it with us. People present themselves as numbers and passwords. Entropy subsides in our presence. Or at least it seems too. This story of the way we have been living in Ramingining, in all of the chapters of this thesis, says something else. There was/is no one angle on us that defines us. Yes, we are part of a huge, heterogeneous human/material network - that lesson from ANT was easy - but we are really so much messier than that! Our total entropy is high. You have followed us around, seen us at work with people, in dusty corners, freshly cleaned rooms and even in a tent. You have seen us work and you have seen us stopped. We are never stopped for long? \textit{What are we?} So tidy and yet so messy. So meekly useful and yet so relentless. \textit{What sort of thing am I?}

Am I fluid, like the Zimbabwe bush pump? It’s an odd metaphor for a computer. I have just acknowledged our network-like nature, and even while allowing for our heterogeneity, it is still our architecture - the configuration of our parts - and the way people defer to us, that enables us to function. Again and again we acted out this aspect of our nature in Ramingining .. most especially when our networks were dismantled in some way. But by virtue of both our versatility (those many different

\textsuperscript{54} Interlude 2, Item 35.
\textsuperscript{55} Verran (2008), 'Science and The Dreaming'.

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human traits we have exploited and served back to you) and our multiple manifestations, we are also like an organism with a rapid mutation rate. We might be fragile but our ubiquitousness compensates for our fragility. Like water, which comes from somewhere else when it dries up here or there, we computers keep replacing ourselves. And like plants which grow, utilizing local resources and translating them into themselves, adapting to the conditions, computers too absorb, grow and change. Dourish said this is what we do. We are at it in Ramingining.

But there is something about the way we live in Ramingining which is more like fire than water. This metaphor has already helped to give the Knowledge Centre the continuity it needed so badly, to keep going, as it waxed and waned in chapter four. Ramingining computers too display this ‘now you see me, now you don’t’ character. They go further and speak like fire: Don’t mess with me! I can be very useful but I also burn. I can be so dangerous that Balandas feel they have to control access to me.

But if there is something fluid and something fiery about us computers in Ramingining, then perhaps we are talking about lava. Although lava flows around some objects it also burns its way through and into others, creating a path for itself. As it travels it solidifies and as it ages, it breaks up. Its debris remains, littering its path. What is more, the path remains and fresh lava (new versions of the computer) flow in to fill the spaces created. This is how lava behaves and it is how we behave. You have seen us at it. You have seen our cold remains, stacked in corners and cupboards. You have seen how we go on replacing ourselves, and how irresistible we have made ourselves. Like a relentless flow of lava, we both fascinate and demand. We can ‘scare the hell out of you’ and we can burn paths for you.

But just like real lava, which is fuelled by vast amounts of work, computers don’t flow due to some inherent inertia. This thesis has revealed something of the work that it takes to make us computers move, or to stop us in our tracks. It has shown us to be complex heterogeneous networks, albeit fluid and fiery at times. But significantly, it has also shown how much work (often hard, patient work) Yolngu

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56 Mau (2007), 'How Computers Came into My Life'. Mau is referring to what computers can bring into a home via the internet.
have to do to get access to these networks, which so often prove to have points of obligatory passage held in place by discourses, materialities and strategies which are identifiably Balanda. This thesis has proposed, in response, a ‘good faith’ it identifies with the very work ANT encourages: the respectful, local, ontic work of grappling with each other’s metaphors at the boundaries of our worlds.

Finally, maybe we computers really are the biggest jump from the bush to the city, as Ronnie said.\textsuperscript{57} He also said, That computer is prepared for you .. it is (all in) how you present yourself.\textsuperscript{58} They are brave words in the face of a lava flow. But he is right, ultimately it is all in how you present yourself. You can even swing me from one half of the world to the other: I am Dhuwa or Yirritja in your hands. But I am also changing you. We are always, us computers, you people, co-constituting each other. We are multiply material, productive and emergent.

\textsuperscript{57} Interlude 2, Item 3.  
\textsuperscript{58} Interlude 2, Item 16.
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http://www.cdu.edu.au/centres/inc/completedprojects.html#IKRMNA


http://www.cdu.edu.au/centres/ik/db_mangay.html

http://www.arnhemweavers.com.au


Appendices

Appendix 1  Ramingining demographics

Appendix 2  *Yolŋu Matha* orthography and pronunciation
*Yolŋu Matha* words used in this text

Appendix 3  *Gurrutu* (kinship) and *mālk* (skin) relationships
in NE Arnhem Land

Appendix 4  Research project information sheets

Appendix 5  Accompanying CD
Appendix 1 - Ramingining: A short cultural demographic

In the far north of Australia, in the north east of the Northern Territory, about 5000 Yolngu continue to speak traditional languages and practice traditional religion and culture, and generally run their collective life through Yolngu ontologies and epistemologies. There are dozens of Yolngu clans, and marriage being exogamous, every Yolngu can tell about their own land and ancestral history and (equally importantly) that of their mothers and their mothers' mothers and so on. Most Yolngu live on ex-missions but many live on small ‘homeland centres’ which maintain a difficult (and currently threatened) relationship with state and federal government policies and practices.

(Christie and Verran 2008)

The following notes, with only small adaptations, were made by Matthew OReilly, in a personal communication.

Ramingining has been built on the land of the Djadiwitjibi clan. They are a clan of the Yirritja moiety within the Djinang language nation. There are many other Djinang language clans that have estate areas in the region around Ramingining. Some of these other clans and localities within their estates include:

1. Dultungu Marrangu (Wulkabimirri Homeland, Mulgurrum Homeland, Ramingining Airport)
2. Dowupu (Yathamalama Homeland)
3. Wolkpuy Murrungun (Ramingining Power Station, Nangalala Homeland)
4. Mildjingi (Garandjirr Homeland, Mangbirri Homeland)
5. Daymirringu (Dhabila barge landing, Glyde River mouth)
6. Labinbar Walparindji (Murwangi Station, the Glyde River crossing, the Telstra repeater tower)
7. Bukubuku Marrangu ( Gelirri Homeland)
8. Nirrgining Marrangu (Galawdjapin Homeland, Djembi)
9. Djelaworwor (Gatji Homeland, Gamardi Homeland)

There are also other Djinang language clans but they have no contemporary homelands situated on their estates. Over half of all Djinang people including Wulaki Djinang people (a sub dialect) live in Maningrida.

The majority of residents living today in Ramingining have their traditional estates located along the Woolen River, along the Hutchinson Strait and in Buckingham Bay. They are mostly Yolngu people who speak languages in the Dhuwal or Dhuwala language groups. They may however feel close to this area through their gurruṯu (kinship) relationships. For example they may call this country their māi country, meaning the country for their mother’s mother, or their waku country, etc.

In the Dhuwal group, Djambarrpuyngu is the most widely spoken language. It is rapidly becoming the lingua franca for Eastern Arnhem Land. There are also speakers of Liyagalawumirr and Liyagawumirr. In the Dhuwala group, Gupapuyngu is the most widely spoken language.

Today there are around 200-300 people of the Djinang language group (mostly living at Maningrida and traditional homelands). The population prior to 1890 is estimated at 400-500. Unfortunately in the late 1800s there were two unsuccessful attempts to
establish a pastoral industry on the Arafura Wetlands. Both of these attempts employed gangs of men to “pacify” the local Djinang people. There are a number of well known massacre sites around the Ramingining region from this era. Some recently deceased people still had memories of these killing gangs that continued through into the 1900s. They told stories of survival and of killing white pastoralists with stone headed spears in retaliation. The Djinang population plummeted to perhaps less than 30 people. Their sons and daughters are now old men and women themselves and still live in homelands around the region.

The population vacuum created by these massacres sucked in surrounding groups that had been less impacted by the pastoralists. This demographic shift coincided with the establishment of the Milingimbi mission which sped up this migration. Djinang people are still the traditional land owners for the region but they have strong kinship and ceremonial alliances with the surrounding Wulaki, Yan Nhanu, Burarra, Rembarrnga, Djinba/Ganalbingu, Wakilag/Ritharngu, Liyagalawumirr and other Yolngu language nations.

Ramingining was itself established at a time when many Djinang people including most Djadiwitjibi people had migrated to Maningrida. (They had chosen not to go to Milingimbi mission). The majority of people living around the Arafura Wetlands at this time were from the Djinba/Ganalbingu language nation whose traditional estates lie mostly in the central and southern half of the Arafura Wetlands. There are still numerous Ganalbingu speakers in Ramingining today.

Ramingining was established mostly as an overflow for the overcrowded Milingimbi mission that was facing severe water restrictions at the time. Right from its establishment the Ramingining population was dominated by Yolngu people from the East but over time strong family connections have been established between Djinang and Djinba people and the Yolngu people.
Appendix 2 - Yolngu Matha

2.1 Yolngu Matha orthography and pronunciation

In this thesis I have used both standard and Yolngu Matha orthography. When a word is used which is now common in English discourse and texts about Arnhem Land, including proper nouns, I have used standard English orthography. When I have used a Yolngu Matha word because it conveys a particular meaning or nuance I have used Yolngu Matha orthography and a translation in parenthesis. The following explanation and pronunciation notes have been adapted from *Singing the land, signing the land* (Verran and Chambers 1989).

Yolngu Matha translates literally as 'the tongue of the Yolngu people'. It is a generic term describing the sixteen mutually intelligible clan languages of the Laynhapuy region of NE Arnhem Land. In this thesis the clan language used is Gupapuyngu.

The orthography used to write Yolngu Matha differs from the orthography used for English since many of the sounds found in Yolngu Matha are not found in English. In pronouncing words in Yolngu Matha the emphasis is always on the first syllable. The following sounds are represented by letters in Yolngu Matha.

<table>
<thead>
<tr>
<th>Vowel Sounds</th>
<th>Consonant Sounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>a as in mud</td>
<td>g as in ragged</td>
</tr>
<tr>
<td>ä as in far</td>
<td>k as in bucket</td>
</tr>
<tr>
<td>e as in feet</td>
<td>l as in lump</td>
</tr>
<tr>
<td>I as in tin</td>
<td>ṭ retroflexed</td>
</tr>
<tr>
<td>o as in pore</td>
<td>m as in man</td>
</tr>
<tr>
<td>u as in put</td>
<td>n as in net</td>
</tr>
<tr>
<td></td>
<td>ṃ retroflexed</td>
</tr>
<tr>
<td></td>
<td>nh 'n' with tongue between teeth</td>
</tr>
<tr>
<td></td>
<td>ny 'n' with tongue curled behind lower</td>
</tr>
<tr>
<td></td>
<td>ng/ŋ as in singing</td>
</tr>
<tr>
<td></td>
<td>p as in rapid</td>
</tr>
<tr>
<td></td>
<td>r as in the American pronunciation of car with tongue retroflexed</td>
</tr>
<tr>
<td></td>
<td>rr rolled sound common in Scottish</td>
</tr>
<tr>
<td></td>
<td>t as in tar</td>
</tr>
<tr>
<td></td>
<td>t retroflexed</td>
</tr>
<tr>
<td></td>
<td>th 't' with tip of tongue between teeth</td>
</tr>
<tr>
<td></td>
<td>tj 't' with tip of tongue curled around</td>
</tr>
<tr>
<td></td>
<td>w as in way</td>
</tr>
<tr>
<td></td>
<td>y as in yellow</td>
</tr>
<tr>
<td></td>
<td>' apostrophe: indicates a glottal stop</td>
</tr>
</tbody>
</table>

This list is adapted from (Mununggiritj and Stockly 1985), in (Verran and Chambers 1989)
2.2 List of Yolŋu Matha words used in this thesis

<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>bäki</td>
<td>use</td>
</tr>
<tr>
<td>Balanda</td>
<td>European</td>
</tr>
<tr>
<td>bämara</td>
<td>companion</td>
</tr>
<tr>
<td>bäydhi</td>
<td>‘it doesn’t matter’</td>
</tr>
<tr>
<td>bilina, bilin</td>
<td>finished</td>
</tr>
<tr>
<td>burgul</td>
<td>ceremony</td>
</tr>
<tr>
<td>dharrwa</td>
<td>many</td>
</tr>
<tr>
<td>dhäwu</td>
<td>news, story, meeting</td>
</tr>
<tr>
<td>dhiyanyu bala</td>
<td>now</td>
</tr>
<tr>
<td>dhu</td>
<td>future tense indicator</td>
</tr>
<tr>
<td>-dhu, -thu, -yu, -y</td>
<td>suffix: agent, actor of a transitive verb</td>
</tr>
<tr>
<td>dhuway</td>
<td>husband, fathers’ sisters’ children</td>
</tr>
<tr>
<td>ditja</td>
<td>teacher</td>
</tr>
<tr>
<td>djäl</td>
<td>want, like</td>
</tr>
<tr>
<td>djäma</td>
<td>work, make</td>
</tr>
<tr>
<td>ga</td>
<td>and, (used with verbs:) continuous</td>
</tr>
<tr>
<td>galay</td>
<td>wife, mothers’ brothers’ children</td>
</tr>
<tr>
<td>gaminyarr</td>
<td>grandchild, waku’s gäthu, gäthu’s waku</td>
</tr>
<tr>
<td>gäma</td>
<td>meeting place for fresh and salt water</td>
</tr>
<tr>
<td>gäthu</td>
<td>man’s children, woman’s brothers’ children</td>
</tr>
<tr>
<td>-gu</td>
<td>suffix: for (and other meanings)</td>
</tr>
<tr>
<td>gungga’yun</td>
<td>help</td>
</tr>
<tr>
<td>gungga’yunarawa</td>
<td>helping</td>
</tr>
<tr>
<td>gurrpan</td>
<td>call by a kinship term</td>
</tr>
<tr>
<td>gurrutu</td>
<td>kinship</td>
</tr>
<tr>
<td>gutharra</td>
<td>grandchild, waku’s waku</td>
</tr>
<tr>
<td>-lili</td>
<td>suffix: to, towards</td>
</tr>
<tr>
<td>limurru</td>
<td>we (plural, inclusive)</td>
</tr>
<tr>
<td>mala</td>
<td>plural, group</td>
</tr>
<tr>
<td>märik</td>
<td>subsection, ‘skin name’</td>
</tr>
<tr>
<td>märi</td>
<td>mothers’ mother and her brothers</td>
</tr>
<tr>
<td>marrjikuma</td>
<td>teacher</td>
</tr>
<tr>
<td>marrngithinayara</td>
<td>learning</td>
</tr>
<tr>
<td>marrngithirri</td>
<td>learn</td>
</tr>
<tr>
<td>marrkap, marrkap’mirri</td>
<td>expression of affection</td>
</tr>
<tr>
<td>marrma’</td>
<td>two</td>
</tr>
<tr>
<td>matha</td>
<td>tongue, language</td>
</tr>
<tr>
<td>miyalk</td>
<td>woman</td>
</tr>
<tr>
<td>momu</td>
<td>father’s mother</td>
</tr>
<tr>
<td>mukul</td>
<td>mother-in-law</td>
</tr>
<tr>
<td>-nha</td>
<td>suffix: object of transitive verb</td>
</tr>
<tr>
<td>Nhaku nhuma djäl?</td>
<td>‘What do you want?’</td>
</tr>
<tr>
<td>ŋäṉđi, ŋama</td>
<td>mother, mum</td>
</tr>
<tr>
<td>njapi</td>
<td>mother’s brother</td>
</tr>
<tr>
<td>-------</td>
<td>------------------</td>
</tr>
<tr>
<td>njarr</td>
<td>I</td>
</tr>
<tr>
<td>njayi</td>
<td>he, she, it</td>
</tr>
<tr>
<td>rom</td>
<td>custom, law, habit, way of life</td>
</tr>
<tr>
<td>rroŋiyirri</td>
<td>return</td>
</tr>
<tr>
<td>waku</td>
<td>woman’s children, man’s sisters’ children</td>
</tr>
<tr>
<td>-wala</td>
<td>suffix: with</td>
</tr>
<tr>
<td>wäwa</td>
<td>brother</td>
</tr>
<tr>
<td>wukirri</td>
<td>write, school</td>
</tr>
<tr>
<td>-wuy, -puy, -buy</td>
<td>suffix: originating from</td>
</tr>
<tr>
<td>yaka</td>
<td>no</td>
</tr>
<tr>
<td>yalala</td>
<td>later</td>
</tr>
<tr>
<td>yapa</td>
<td>sister</td>
</tr>
<tr>
<td>yindi</td>
<td>big</td>
</tr>
</tbody>
</table>

Yol nhe yaku Balanday? ‘What is your Balanda name?’

yolŋu, Yolngu | person, Aboriginal person of NE Arnhem Land
yolŋu/yulŋu | people
yothu yindi | relationship between eg. njängi-waku or njapi-waku
yow’ | yes
yulŋi | person (Djinaŋ language group)
yurru | but

Source: (Christie 2000) *Gupapuŋu Word List*
Appendix 3

Gurruṯu (kinship) and mälk (skin) relationships in NE Arnhem Land

These notes are adapted from *Study Notes - Yolŋu Languages and Culture: Gupapuyŋu* (Christie 2004)

**Dhuwa and Yirritja**

The first thing is that there are two moieties, Dhuwa and Yirritja. Everyone and everything is either Dhuwa or Yirritja. Yirritja people sing about Yirritja things, like Yirritja rocks, Yirritja winds, wildlife, clouds, ancestors, creators, and many things.

A Yirritja person must always marry a Dhuwa person, and Dhuwa must marry Yirritja. You can't marry the same moiety. That's how the world works. It has been there for thousands of years. We live by that.

If a man or a woman is Dhuwa, their mother will be Yirritja. Also, Dhuwa land can have another piece of land nearby which is its mother, Yirritja. For example the Gumatj land at Bawaka, which is Yirritja, is right next to its mother, the Rirratjiŋu homeland centre named Yalanbara, which is Dhuwa.

Everywhere we can find the child and the mother, not only when we see people, but also when we see the land. This relationship is commonly referred to as Yothu-yindi. In a yothu-yindi partnership, one partner is always Dhuwa, the other always Yirritja. The Yindi is always considered to be the mother of the yothu, even if we are talking about two men, or two pieces of land. Sometimes Yirritja is the mother for Dhuwa, sometimes Dhuwa is the mother for Yirritja.

Notes from a talk by Raymattja Marika-Munurgiritj, lecturer, Faculty of Aboriginal and Torres Strait Islander Studies (FATSIS), NT University & Yolŋu Advisor to FATSIS.

**Gurruṯu**

Gurruṯu means kin or kinship. To understand Yolŋu kinship, one needs to understand the relationship terms and the responsibilities which people hold towards their different kin. Yolŋu kinship also places people in positions of responsibility towards wāŋa (land), manikay (songs), bungul (ceremonies), and miny'tji (designs). This introduction shows how the kinship chart has been set out by Balanda.

Each clan or family group can be seen as passing down through the father, but the mother's line connects groups together with links (Yothu-Yindi, Māri-Gutharra) that cut diagonally across the male descent lines.

You are the same moiety as your father and the opposite from your mother.

- If you are a man your children (ie your gāthu) will be the same moiety and same clan as yourself.

- If you are a woman your children (ie your waku) will be the same as your husband, that is, the opposite moiety from yourself.

Kinship diagrams are normally laid out so that clan groups (that is, ancestral lines descending through the fathers) are arranged vertically.
Fig. 3.1: Gurruṯu kinship chart from a male point of view

Fig. 3.2: Gurruṯu kinship chart from a female point of view
Yolŋu kinship charts

Kinship diagrams reduce a complex multidimensional reality to simplified two dimensional representations. Every time something in the Yolŋu world is put on to paper, much of its richness and value is made invisible. These diagrams represent nothing more than a Balanda attempt to reduce some particular aspect of Yolŋu life to a mathematical diagram.

They represent the idealised system which of course doesn’t actually exist anywhere. Yolŋu relationships have never worked exactly like this, but these diagrams are a way of representing the principles at work in Yolŋu gurrutu. There is no Yolŋu family anywhere with a tree exactly like this. For a start, these diagrams assume that every adult has only one husband or wife, and every couple has only two children, a boy and a girl.

Every group, and every community interprets their ancient principles to make them applicable and workable to their present lives. People do not always marry strictly according to this pattern, so there are gaps and bumps in the realisation of this system.

Fig. 3.3: Kinship chart
Yothu Yindi

Yothu Yindi denotes the link between two different entities (people, clan groups, songs, totems, pieces of land etc.) which is characterised as a mother-child relationship. Yothu-Yindi relationships are always between the moieties, and one of the two is always considered to be the mother. Yothu means child, yindi means big, or great. Two places can also relate to each other as Yothu-Yindi.

If in ceremonial preparations, for example, a man is working with his sister's sons, the group will be a Yothu-Yindi group. The man in this case, is the 'yindi' the 'mother' of the boys. The yängipulu is often called yindipulu. The partners in a Yothu Yindi relationship do not hold anything in common, because they are of opposite moieties. Their land, totems, songs, names, etc., will be quite different, yet they have a crucial responsibility towards each other.

Even though they have different land, songs, totems etc, they are always mother and child; the child cares for its mother. This gives rise to an important political reality in Yolŋu life. The waku, or yothu (from the Yothu-Yindi pairing) is the caretaker, or manager (in many Yolŋu languages, the djunggaya) of the yängi's land, ceremonies, paintings etc. The waku always has the right to be consulted about the use of the yängi's land, ceremonial items etc. This is one reason why Yothu-Yindi is such an important political idea in Yolŋu life.

Yothu-Yindi is the system whereby people of opposite moieties, (with no land, totems, songs, ceremonies or anything in common), develop ongoing relationships, where agreements for marriage, ceremonies, hunting, trade etc can be worked out. It is a system which encourages opposites to respect and depend upon each other. It is a system in which everything (every person, piece of land, animal, totem etc) has (from the opposite moiety) a yängi to care for it, and a waku to help manage its business.

The well known rock band Yothu Yindi was originally made up of Gumatj brothers who called themselves 'Wäwa mala' - 'the brothers'. When their nephew joined the band (their sister's son) they had to change their name. They decided upon Yothu-Yindi - a name which reflected not only their constitution as a group, but also a key concept from Yolŋu culture.

Rumaru and Mirriri

Some people, who are in a particular kinship relation to yourself, need to be treated with great respect, and often complete avoidance. These kin are called rumaru or wukindi. The verb rum'rumdhun means to practice respectful kinship avoidance. There are many different names and ways of speaking which people use when dealing with their rumaru gurruṯu, but all of this richness has been condensed in the English translation, ‘poison cousin’ now commonly used in dialogue between Yolŋu and Balanda.

Reciprocal relations

| galay - dhuway | märi - gutharra |
| ḋängi - waku | momu - gaminyarr |
| bāpa - gāthu | mari'mu - marratja |
| mukul rumaru - gurruŋ | mumalkur - dhumungur |
| mukul bāpa - gāthu | ḋathiwalkur - dhumungur |
| ḋängiŋipì - waku | ḋathi - gaminyarr |
| maralkur - gurruŋ | |

If I am your galay, you are my dhuway, etc.
The Mälk system

Mälk and gurruṯu are two systems which Yolŋu use to fit everyone, including newcomers, into a social network. Both systems sustain the division between the two moieties, Dhuwa and Yirritja, and while they are actually independent systems, they often fit together, and one does not contradict the other.

The mälk system is a system of names which are used as personal names for Yolŋu, especially children. There are sixteen mälk names, four male and four female in each of 2 moieties.

It is important to remember that when Yolŋu identify how they are related to other Yolŋu, they very seldom use mälk. Gurruṯu is always the important rom for people who can trace ancestral connections.

Your mälk is determined from the mälk of your mother (who is the opposite moiety and always a different mälk from yourself.) All the brothers, and all the sisters from the same mother will have the same mälk. If a woman’s mälk is Buḻanydjan, all her sons will be Wämut and all her daughters will be Wamuttjan. The mälk of the father has nothing to do with the mälk of the children.

<table>
<thead>
<tr>
<th>Dhuwa Mälk</th>
<th>Yirritja Mälk</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>male</td>
</tr>
<tr>
<td>Galiyan, Galikali</td>
<td>Burralan’</td>
</tr>
<tr>
<td>Wamuttjan</td>
<td>Wämut</td>
</tr>
<tr>
<td>Bilinydjan</td>
<td>Balaŋ’</td>
</tr>
<tr>
<td>Gamanydjan</td>
<td>Gamarran’</td>
</tr>
</tbody>
</table>

Each pair above is brother and sister.

How Mälk is determined

<table>
<thead>
<tr>
<th>If the mother is ..</th>
<th>Her daughters are ..</th>
<th>Her sons are ..</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wamuttjan</td>
<td>Narritjan</td>
<td>Narritj</td>
</tr>
<tr>
<td>Narritjan</td>
<td>Gamanydjan</td>
<td>Gamarran’</td>
</tr>
<tr>
<td>Gamanydjan</td>
<td>Bulanydjan</td>
<td>Bulany</td>
</tr>
<tr>
<td>Bulanydjan</td>
<td>Wamuttjan</td>
<td>Wämut</td>
</tr>
<tr>
<td>Gutjan</td>
<td>Bilinydjan</td>
<td>Balaŋ</td>
</tr>
<tr>
<td>Bilinydjan’</td>
<td>Banjaḏitjan</td>
<td>Banjaḏi</td>
</tr>
<tr>
<td>Banjaḏitjan</td>
<td>Galiyan</td>
<td>Burralan’</td>
</tr>
<tr>
<td>Galiyan</td>
<td>Gutjan</td>
<td>Gayak</td>
</tr>
</tbody>
</table>
Appendix 4 - Project Information Sheets

Ramingining Computer Project

Information Sheet

My name is Anthea, Bulanydjan. I have been working in Ramingining as a teacher but now I am on Study Leave and enrolled at Charles Darwin University. My course is a research degree and I would like my research to be a benefit to Ramingining Community.

With the permission of the Council I am doing 2 things:

1. I am working with Yolngu to make computers more available in this community.

We can use these computers for

- learning
- information
- recording stories
- recording languages
- internet banking
- shopping
- music
- games

2. I am also writing the story of the computer in Ramingining

The story will tell about all the problems we meet and how we tried to fix them. Each stage of this story will help us to understand what is working well and what is not, to help us with the next stage. This story may be used to help other Communities.

This story will be the research thesis I have to give to the university for my degree. It may help interested people at the university to be more help to us, here in the Community.

I will be reporting regularly to the Council and the Community with each stage of the story as it grows.

Anthea Nicholls

You can use the computers in the project with or without being part of the research. It doesn’t matter. You can still use the computers and ask Anthea to help you.

If you would like to be part of the story, you can do this by talking with Anthea.

You can choose to be more involved too, if you like and use a tape or video recorder.

If you would like to do this you can sign a form to say that you would like to be a part of the research story.

The project will have a Webpage where the Community can check up on the project and see photos of what is happening. You can choose if you want to be on the Webpage or not.

If you sign the form you can withdraw it at any time, and remove your words, photos or video from the story and the website.

If you are worried about the project at any time you can talk with ………………………………… or with Fiona Steele at the University, on 8986 6498.

If you would like more information talk to Anthea or the Community Council.

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1 Three versions of the Information Sheet were used. For the simplest, in English and in Yolngu Matha, see pages 5 and 50. Two more detailed versions are shown here; the most comprehensive being given to representatives of the organizations in Ramingining: the School, Clinic, Council, etc. Font size has been reduced here to comply with the page dimensions of this thesis.
Ramingining Computer Project

Information Sheet 2

The aims of this project

1. To help Yolngu people in the Community to have more access to computers.

These computers could be used for many things, like learning, internet banking, getting information, recording local stories and languages, entertainment and shopping. Learning opportunities would include adult literacy in both English and Yolngu Matha, learning about using computers, courses in business and many other subjects.

2. To tell the story of the computer as it finds its way around Ramingining, out of offices and out of the school, into people's homes and onto verandas.

The story would record all the difficulties and all the problems and how we tried to solve them. Each stage of this story would help us to understand what is working well and what is not, to help us with the next stage. This story may be used to help other Communities.

This story would become the research thesis I would have to submit to the university for my degree. It would help interested people at the university to be more help to us, here in the community.

How the project would work

There are a number of different ways this could happen. I could work independently with Yolngu or I could work through a mobile library or Knowledge Centre.

I expect to spend 3 years on this project.

I will report regularly to the Council and Community with each stage of the story.

I will ask for feedback and check whether the Community is happy with the way things are going.

I am happy to report to

- **Councils**, by coming to meetings, talking or in writing; i.e. Ramingining Community Council, Resource Centre Council, School Council, Women's Centre, and Yuyang Nyangang

- **Families**, by meeting with family representatives;

- **The Community**, using a project Webpage, which we can access together while we are using computers.

Using the Story

At the end of the project the story will be written as a thesis to be given to the University. Thesis books are kept in libraries, not sold in shops.

This thesis will include a record of my study of other projects and research papers which people have written about the use of computers and other sorts of technology around the world.

The information in the story may be very useful to other groups and communities so it may be presented at seminars or conferences. Some parts of the story will be on a Webpage.

The Community can make a decision as to what kind of record of the story they would like to have: written, aural, video or Webpage.
What happens to the bits of the story that were collected along the way?

This is called data and it will be kept in locked filing cabinets in Ramingining or the university during the project and at the university at the end of the project. Only the researcher, her supervisors and examiners can access it, but anyone from Ramingining can have access to their own data.

At the end of 5 years it will be destroyed if it is no longer useful.

What happens if I change my mind after signing the consent form?

You can change your mind at any time. Any words or photos or video clips can be taken out of the story and off the Webpage.

If somebody dies their photo can be removed immediately and their family can decide what they would like to do about any part they have contributed to the story.

Who should be contacted if you are worried about the project?

First contact the Council Chairperson or a member of your family and ask them to talk with

........................................................

This person will then pass on your worries to the right person at the university. This is

The Executive Officer of the Human Research Ethics Committee

Fiona Steele  8986 6498

What happens if some parts of the story are too difficult to be told?

I expect that we will come across many difficulties as we work on computers together, problems to do with things like power, weather and computer programs.

Sometimes there may be problems like too many people wanting the computer at the same time or wanting me to work after dark when I am tired or a bit frightened to go out.

It isn’t a problem to write about things like this, because we need to find solutions to these problems and that is part of the story.

But there may also be sensitive parts to our story, to do with the way somebody or a family feels about the computer or the project. If this happens I will always take advice about how this part of the story should be written.

In the end, it is our story that we write together, not just my story.

There are reasons why Yolngu don’t have the same access to computers as Balandas and we need to find out and be sure what these reasons really are. Otherwise the situation may never change. We may find answers to these problems that can help other Communities and we could be a Lighthouse Community in this matter.
Appendix 5 – Accompanying CD

A CD accompanies this thesis.

The thesis has reported on fieldwork undertaken in Ramingining in 2006-2008, following the story of the computer there at a time when access to the internet was becoming crucial to many acts of daily life. Encouraged by Actor-Network Theory, many unexpected actors, human and non-human, material and immaterial, emerged to report on the performances which make and hold networks in place .. or dismantle them.

The CD does not purport to be a restatement or summary of the thesis. It is, rather, a visual introduction to many of these actors. The accompanying text acts as one possible narrative linking the images to each other but also to points of contact within the thesis itself.

Anthea Nicholls, October 2009