



The technologisation of practice in early childhood nursing : collaborating for innovation and change

Author:

Greenfield, David

Publication Date:

2004

DOI:

<https://doi.org/10.26190/unsworks/21551>

License:

<https://creativecommons.org/licenses/by-nc-nd/3.0/au/>

Link to license to see what you are allowed to do with this resource.

Downloaded from <http://hdl.handle.net/1959.4/20518> in <https://unsworks.unsw.edu.au> on 2024-10-21

**The Technologisation of Practice in Early Childhood Nursing:
Collaborating for Innovation and Change.**

David Greenfield
Doctor of Philosophy
University of New South Wales
2004

Abstract

There is a need for research to understand change processes and knowledge management in health service organisations, and indeed public sector organisations in general. This research seeks to explain how knowledge becomes formulated and thereby mobile, and also how practice has come to be established, visibilised and thereby sustained in a specific context. Exploring practice within a health service organisation, and in particular a public health service organisation, is a particular feature of this research. The research demonstrates how collaboration becomes necessitated under pressure of enacting increasingly complex work activities, an outcome being changing practices and extended accountability relationships which enacts discipline while realising expertise.

Using an ethnographic approach, the research explores how the practice of early childhood nursing in the South Western Sydney Area Health Service became a specialised expert undertaking. The research examines how change has occurred, whereby early childhood nursing was refined from being one part of the generalist community nursing practice to being a specialised practice through the increasing technologisation of practice. The technologisation of practice refers to the artefacts, conduct and the processes through which the conceptualisation and enactment of early childhood nursing has become increasingly standardised. Through the technologisation of practice explicit knowledge becomes distributed within the artefacts for practice and tacit knowing becomes distributed across, and is continually enacted by, the collaboration of the practice community.

There are four interrelated aspects to the technologisation of practice. Firstly, the technologisation of practice involves standardising the conceptualisation and enactment of practice through constructing a multi-dimensional practice resource within a community of practice. Secondly, the technologisation of practice involves the mobilisation and refinement of the multi-dimensional practice resource to realise a practice network involving extended relationships of accountability. These relationships of accountability are within a profession and also with other professionals. Thirdly, the technologisation of practice involves the ongoing enactment of accountability in a

collaborative community of practice. The research shows that a team can become a collaborative community by constructing an accountability context, reorganising and facilitating the team, and then amalgamating the organising and service delivery activities through integrating formal meetings and informal interactions. Fourthly, the technologisation of practice involves the collaborative community assemblage and/or appropriation of further technologies into practice thereby strengthening the local and extended relationships of accountability and expanding the boundaries of practice.

The research describes how the technologisation of practice is the enactment of a number of mutually enabling practice dualities, which together simultaneously discipline and realise expertise. The interrelated practice dualities are individual-community, subjective-objective, local-global, formal-informal and governmentality-communal self-governance. The situatedness of practice is shown to necessitate a subjectivity-objectivity duality, whereby individual and communal experience is drawn upon to see through the otherwise opaque nature of statistics and information. The alignment of practice with the broader organisation and professional colleagues realises a local-global duality, whereby the community's local understandings are informed and shaped by distant issues. The formal-informal duality is a mechanism by which practice is increasingly collaboratively conceptualised and enacted, and thereby standardised. Individual and communal 'expertise' becomes realised through the assemblage and appropriation of organising and transforming tools and artefacts, or alternatively technologies. At the same time, the community in defining the use of such technologies as competent practice is disciplining their own conduct. Through this action a governmentality-communal self-governance duality is realised as the nursing community pursues expertise while disciplining themselves; by engaging in collaborative interactions and using standardised technologies the community constructs and makes visible their knowing, practice and expertise.

Contents

Abstract.....	ii
Contents.....	iv
Abbreviations used in the thesis	xi
Acknowledgements.....	xii
Chapter One: Introduction	1
1. Introduction	1
2. The research context	3
2.1 The research setting	3
2.1.1 South Western Sydney Area Health Service	3
2.1.2 The Simpson Centre / Kidz clinic context	4
2.1.3 The Child and Family Health Nursing Team.....	6
2.2 The Ingleburn Baby Information System - 'IBIS'	7
2.3 The Mother and Infant Network – The 'MINET' program.....	9
2.4 Enacting a research focus.....	12
3. The guiding argument of the research	15
3.1 Reasons for the research.....	15
3.2 Theoretical points of departure	21
3.2.1 The community of practice concept	21
3.2.2 The practice of inscription, or immutable mobiles.....	22
3.2.3 Governmentality and governance.....	23
3.3 The technologisation of practice	25
4. Organisation of the thesis.....	28
5. Conclusion	30

Chapter Two: Realising research expertise	31
1. Introduction	31
2. Becoming the ‘researcher’	34
3. Enacting a research focus	39
3.1 Participation within the CCGRH community	40
3.2 Engaging with the Simpson Centre	41
3.3 Constructing a research focus	44
3.4 Expanding the research location – the CFHNT	49
3.5 Participation with the CFHNT	53
4. Enacting research expertise	60
5. Conclusion	62
Chapter Three: Methodological approach to the research	63
1. Introduction	63
2. The ethnographic approach	64
2.1 The genealogy of ethnography	64
2.2 Representation and legitimisation	67
3. Data collection and analysis	74
3.1 Methods of data collection	75
3.1.1 Participant observation	75
3.1.2 Interviews	77
3.1.3 Document analysis	80
3.1.4 Respondent validation	80
3.2 Data analysis methods	82
4. Credibility and verification	85
4.1 Reflexivity and audit trail	86
4.2 Prolonged engagement and persistent observation	87
4.3 Clear exposition of methods of data collection and analysis	87
4.4 Triangulation	87
4.5 Peer review	88

4.6	Rich, thick description	89
5.	Limitations of the research	89
6.	Ethical issues	91
7.	Conclusion	93

Chapter Four: Theoretical points of departure and perspectives that inform the research

1.	Introduction	96
2.	The theoretical points of departure.....	97
2.1	The community of practice theory	97
2.1.1	A community of practice	98
2.1.2	Similar but differently named concepts within the literature.....	101
2.1.3	Dimensions of a community of practice	103
2.1.4	Modes of belonging	106
2.1.5	Changes to the theory regarding the dimensions of a community...	108
2.1.6	Changes to the theory regarding the modes of belonging	112
2.2	The notion of the immutable mobile	116
2.3	Governmentality and governance	118
3.	The perspectives that inform the research	122
3.1	A practice perspective.....	122
3.2	Conceptualising organisations	125
3.2.1	A modernist view of organisations	125
3.2.2	The post-modern view of organisations.....	126
3.3	Knowledge and knowing	127
3.3.1	A cognitivist perspective of knowledge	130
3.3.2	An individual view of knowledge.....	131
3.3.3	A community view of knowledge	131
4.	The two research questions	133
5.	Conclusion	135

Chapter Five:	Standardising the conception and enactment of practice	137
1.	Introduction	137
2.	An emerging context for change	139
2.1	The action of bottom-up entrepreneurship	139
2.2	Collaborating with a discretionary or slack resource	143
3.	Constructing a multi-dimensional resource	146
3.1	Learning-in-working: The emergence of a community of practice ...	147
3.2	The community constructs a prototype	152
3.3	IBIS - A new nursing artefact and associated technology	156
3.4	IBIS - An immutable mobile.....	160
4.	Conclusion	164
Chapter Six:	Extended relationships of accountability	166
1.	Introduction	166
2.	IBIS changes relationships in early childhood nursing	167
2.1	Realising other IBIS communities of practice.....	168
2.2	Constructing an IBIS practice network	173
2.3	Continuous prototyping	176
3.	Reinforcing and extending the relationships of accountability	179
3.1	Expanding the practice perspective	180
3.2	The MINET program	186
4.	Conclusion	191

Chapter Seven: The ongoing enactment of accountability	193
1. Introduction	193
2. Constructing an accountability context	195
2.1 A lack of mutual engagement and trust.....	196
2.2 Opportunity for a collaborative community	200
2.3 A change conversation.....	204
3. Enacting responsibility	209
3.1 Re-organising enacts responsibility	209
3.2 Facilitating responsibility	211
4. Integrating the organising and service delivery roles	215
4.1 Sense making structures: Formal meetings	216
4.2 Practice necessitates the informal	220
4.2.1 The morning-evening ritual.....	225
4.2.2 The lunch ritual	226
4.2.3 Coincidental interactions	226
5. The CFHNT collaborative community enactment of accountability	228
5.1 The CFHNT collaborative practice	228
5.2 Enacting accountability: The cluster meeting	234
6. Conclusion	241
Chapter Eight: Enacting discipline and expertise	243
1. Introduction	243
2. Assemblage and appropriation of resources	245
3. The basic relationship of accountability.....	248
3.1 Basic appropriation of resources.....	248
3.2 Professional development.....	249
4. Strengthening the relationships of accountability	253
4.1 Organising artefacts.....	253
4.1.1 Administration policies.....	254
4.1.2 Clinical practice policies	257

4.2	Transforming tools and artefacts.....	259
4.2.1	Measuring tools	263
4.2.2	Recording-therapeutic artefacts	264
4.2.2.1	Personal Health Record.....	265
4.2.2.2	The AHS Health Record	266
4.2.2.2.1	A local technology.....	268
4.2.2.2.2	A global technology.....	268
5.	Expanded boundaries of practice	270
5.1	The ‘therapeutic early childhood nurse’	271
5.2	A dual alliance.....	279
5.2.1	Alliance with the organisation and state	279
5.2.2	Alliance with the parents-families	283
6.	Conclusion	289
Chapter Nine:	Conclusion and contributions of the research	292
1.	Introduction	292
2.	Contributions to the community of practice theory	296
3.	The two questions	297
3.1	The first question: What enables the sharing of knowledge between peers in different communities?	298
3.2	The second question: How is practice established and sustained in a specific context?	300
4.	The technologisation of practice.....	304
4.1	The first aspect: Standardising practice	304
4.2	The second aspect: Extended relationships of accountability	305
4.3	The third aspect: The ongoing enactment of accountability	305
4.4	The fourth aspect: Discipline and expertise	306
5.	Future research.....	307
6.	The enabling and constraining effects of the technologisation of practice	308

Appendixes.....	312
Appendix One: Map of the SWSAHS	313
Appendix Two: The South Western Sydney Area Health Service	314
Appendix Three: Similar ideas to the community of practice concept	316
Appendix Four: An emerging context for change	324
Appendix Five: The forms used in early childhood nursing	338
Appendix Six: The appropriation of the AHS resources	347
Appendix Seven: Health maps	352
References.....	354
Abbreviations used in the thesis	400

Abbreviations used in the thesis

Abbreviation	Description
SWSAHS / AHS	South Western Sydney Area Health Service
CFHNT	Child and Family Health Nursing Team
IBIS	Ingleburn Baby Information System
HORT	Health Outcomes Resource Team
MINET	Mother and Infant Network
NSW	New South Wales
CCGRH	Centre for Clinical Governance Research in Health
NUM	Nurse Unit Manager
ECN	Early childhood nurse
CNS	Clinical nurse specialist
EPDS	Edinburgh Postnatal Depression Scale

Acknowledgements

I doubt that any of the community health nurses in Ingleburn, who back in 1995 began to question their practice, could have ever envisioned their actions would result in a thesis such as this. To them, and the staff of the Health Outcomes Resource Team, I owe a debt of gratitude for having the courage to believe that things could be different and the energy to pursue their ideas.

I wish to thank the staff of the Simpson Centre who have generously given of their time and thoughts to enable this research to take place. Similarly I thank enormously the nurses of the Child and Family Health Nursing Team in Liverpool for their participation in the research. I will always remember fondly the time I spent with the team and I have great respect for your work and the difference that you make to the lives of many families.

I wish to thank all members of the Centre for Clinical Governance Research in Health at the University of New South Wales. I have valued tremendously your support and contributions, both academically and personally, over the research period. In particular I thank Rick Iedema for his supervision of the research. Rick without your guidance, patience and wisdom this thesis would not have been possible.

I would like to thank my family and friends for their support and encouragement while I have undertaken this enterprise. Particular thanks go to my sister Jaci for her reading and editing work. Hopefully now I will have more time and energy for you all.

Finally to my partner Michelle, thank you for giving me the opportunity and encouragement to pursue a dream. Thank you for your support, love and sharing life together, I look forward to our future with much anticipation.

Chapter One: Introduction

The approach to the study of practice does not divide the construction of routine activity from the manufacture of change. Processes of reproduction or transformation or change are implicated in activity in all settings and on all occasions. (Lave 1988: 190)

With regard to research method, the implications of this analysis are that research into organisational change needs to be qualitative, observational and local more than formal or abstract. (Beeson and Davis 2000: 188)

1. Introduction

This ethnographic research explores how the practice of early childhood nursing in the South Western Sydney Area Health Service has become a specialised expert undertaking. The research examines how change has occurred, whereby early childhood nursing was refined from being one part of the generalist community nursing practice to being a specialised practice through the increasing technologisation of practice. The technologisation of practice refers to the artefacts, conduct and processes through which the conceptualisation and enactment of early childhood nursing has become increasingly standardised. The research demonstrates how collaboration becomes necessitated under pressure of enacting increasingly complex work activities, an outcome being changing practices and extended relationships of accountability, which enacts discipline while realising expertise. This ethnography can be described as constructing a “history of technologisation” (Callon 1986), which involves analysing the context, technology and the ways the clinical practices and organisation have been affected (Beeson and Davis 2000).

To achieve this outcome the research uses as a point of departure four theoretical perspectives, that is, “immutable mobile” (Latour 1986), “community of practice” (Lave and Wenger 1991; Wenger 1998a), “governmentality” (Foucault 1979; Rose 1996, 1999) and the concept of “governance” (Rose 1999; Courpasson 2000; Flynn 2002). Using the notion of inscription and the construction of an immutable mobile, the research shows how practice becomes increasingly defined and standardised. The community of practice concept is used to explore and explain the collaborative conduct and practices of the participants. The ideas of governmentality and governance are then drawn upon to explain the communal discipline and expertise enacted by the participants of a community of practice. In this way the research seeks to explain how knowledge becomes formulated and thereby mobile, and also how practice has come to be established, visibilised and thereby sustained in a specific context. These actions are the technologisation of practice.

The outline for this introductory chapter is as follows. Firstly, the research context – the South Western Sydney Area Health Service (SWSAHS or AHS), the Ingleburn Baby Information System (IBIS) and the Mother and Infant Network (MINET) program - is outlined.¹ The IBIS is the integrated clinical practice tool and database that has been constructed, mobilised and refined by the early childhood nurses in conjunction with the Health Outcomes Resource Team (HORT) and the researchers in the Simpson Centre, all of whom are staff of the AHS. The MINET program is a strategy by the AHS to develop a maternal and infant continuum of care, of which early childhood services are but one component and the IBIS is a key database. Then, secondly, the empirical unfolding of the research is reviewed, including noting the rationale for an ethnographic approach. This leads into detailing the guiding argument for the research, as represented by the phrase the technologisation of practice,

¹ An abbreviation glossary can be located on page xi, or alternatively an identical fold-out glossary can be located at the very end of the thesis.

including identifying the reasons for the research, the two questions addressed by the research and presenting the major concepts utilised. Finally, the chapter closes with the organisation of the thesis being laid out.

2. The research context

This section provides an overview of the research context and focus, a requirement when undertaking ethnographic research (Bradley 1993; Sutton 1993; Boyle 1994; Comaroff and Comaroff 1994; Yin 1994; Johnson 1997a; Altheide and Johnson 1998; Creswell 1998). Firstly, the research setting is briefly detailed. Then the IBIS and the MINET program are both explained and the section closes by reviewing the unfolding process of the research.

2.1 The research setting

The broad setting for the research is the SWSAHS. Within this larger setting the research has taken place in two locations, firstly at the Simpson Centre/ Kidz clinic and secondly with the Child and Family Health Nursing Team (CFHNT) based within Liverpool Health Service. The SWSAHS, the Simpson Centre/ Kidz clinic and the CFHNT will now each be outlined.

2.1.1 South Western Sydney Area Health Service

The state of New South Wales (NSW), in Australia, is divided into seventeen geographical areas for the provision of public health services. Each area has an 'Area Health Service' (AHS) that has the responsibility to coordinate and manage the delivery of public health services. The AHSs, while independent of each other, report to the State Health Department and the Minister for Health in the NSW State Government.

The broad contextual setting for the research is the South Western Sydney Area Health Service (SWSAHS). As the name suggests, the health service represents south western Sydney, the state capital of NSW. Taking in a number of the suburbs in western Sydney, the SWSAHS extends southwards into the semi-rural and rural areas covering a geographical area of 6237 square kilometres (see appendix one for a geographical map of the AHS). The SWSAHS is servicing a population of over 705,789 people, representing 12% of the NSW population and 3% of the Australian population; the population is growing rapidly, with an overall growth of 8.4% in the five years between the 1991 and 1996 Censuses. The SWSAHS incorporates six Local Government Areas - Fairfield, Bankstown, Liverpool, Campbelltown, Wollondilly and Camden, as well as the shire of Wingecarribee (SWSAHS 1999-2000).

The SWSAHS is divided into five sectors united through the Area Management structure that undertakes planning and coordination responsibilities; see appendix two for a diagrammatic representation of the AHS. The five sectors, Bankstown, Fairfield, Liverpool, Macarthur and Wingecarribee, are managed independently and each is responsible for the health needs of the population within their sector. Each sector has at least one large public hospital and a community health centre.

2.1.2 The Simpson Centre / Kidz clinic context

The technologisation of practice is initially explored through the historical construction, mobilisation and refinement of the IBIS. With this historical focus the physical location of the research is the Simpson Centre, a research unit for the SWSAHS organisationally located within the Liverpool sector, and based at the Liverpool hospital. The Simpson Centre undertakes research into improving the clinical services within the AHS, and consists of approximately 12 staff, of which two are primarily focused on the IBIS and the MINET project. At the time of

the research the work of the HORT, a small team of six who collaborated with the nurses to construct and refine the IBIS, and the two researchers in the Simpson Centre had increasingly merged. This merger had proceeded whereby the HORT had taken up space within the Simpson Centre, and they were working with the researchers on the ongoing refinement and implementation of the IBIS. As explained in chapter two, these people are the “key informants” (Davies 1999) who participated in the research, provided access to documents and introductions to other significant people. Of the key informants, only two are male – a research officer and a health informatics officer. The remaining participants – the Director, a researcher, two-research assistants and two administration officers - are all female

In the location of the Simpson Centre the research explored the construction and mobilisation of the IBIS within the context of the ‘Kidz clinic’, a specialised early childhood service established within Community Health in the Campbelltown sector. That is, firstly the research context incorporates the interactions of the community health nurses and the HORT in the Kidz clinic, and then their extended relationships of accountability with other community health nurses and other health professionals across the AHS.

The Kidz clinic is a ‘shop-front’ located in the local shops in the suburb of Ingleburn, and organisationally the nurses are members of Ingleburn Community Health, which is associated with the Campbelltown Hospital. As will be discussed in chapter five, the Kidz clinic was initially established in 1995 and staffed by five nurses, one working full-time and the other four part-time with related community health nursing responsibilities. Associated with the Kidz clinic is the HORT. The HORT worked with clinicians in the Campbelltown area, and then Macarthur sector, to ‘improve health outcomes’ for the local population. The HORT is comprised of a Director, two project officers and several administration assistants. The collaboration of the nurses and the HORT in the Kidz clinic enabled the construction of the IBIS.

As a result of exploring the construction, mobilisation and refinement of the IBIS, the research unfolded to examine the technologisation of practice, as enacted by the CFHNT. The next part outlines the CFHNT.

2.1.3 *The Child and Family Health Nursing Team*

The CFHNT was established in 1999 and is organisationally located in Community Health Services within the Liverpool Health Service, which as the name suggests is within the Liverpool Sector of the SWSAHS. Physically the CFHNT is based at the community health centre, located in the suburb of Hoxton Park. The centre is approximately seven kilometres west of Liverpool hospital, which is located within the heart of the suburb. Depending upon the time of day the travel time to the hospital from the centre varies from fifteen to thirty minutes.

The CFHNT comprises thirteen professional nurses, including a Nurse Unit Manager (NUM). All nurses are female and range in age from their mid twenties through to nearly sixty years; two are in their twenties, three in their thirties, seven are in their forties and one is her late fifties. Since leaving school, all have been nurses for their adult lives and so their corresponding nursing experience ranges from five to over forty years. All nurses are university trained, with some older members of the team having initially undertaken hospital training prior to their university degree. All have worked in nursing for a number of years prior to specialising in early childhood nursing in community health. In the AHS early childhood nursing is now understood to be a specialty area, with the clinical population being infants and children from 0-5 years and their families. In the normal course of events the nurses provide an initial home visit when the baby is born and then offer an ongoing service in their early childhood clinics. The early childhood service provided is a physical assessment of the baby and a psycho-social assessment of the family, including assessment of the mother for post-natal depression. Where necessary the nurses provide referrals to a range of

other professional services, including health services, family support and counselling services, mental health (for postnatal depression) and child protection services.

As is discussed in chapter seven, the mobilisation of the IBIS is one factor that contributed to the establishment of the CFHNT. The next part of this section explains the IBIS.

2.2 The Ingleburn Baby Information System - 'IBIS'

The Ingleburn Baby Information System, or the abbreviation 'IBIS' as it is commonly referred to, represents three facts associated with the construction process. Firstly, the IBIS is named after the physical place where initially conceived and developed, that being Ingleburn, a suburb of the Campbelltown sector, within the SWSAHS. Secondly, the 'baby' element represents the clinical focus of the early childhood nurses, that is, the maternal and child population who are the clinical focus their work. Thirdly, the IBIS was constructed in a format that allows the information collected to be collated into a computerised database. Together these three factors are reflected in the name IBIS, and the IBIS is an early childhood nursing artefact comprising a clinical questionnaire and computer database.

The first version of the IBIS was constructed in 1995-1996 in the Kidz clinic, as noted earlier, through the collaboration of the community health nurses and the HORT. To rephrase, the construction of the IBIS was the standardisation of the conception and enactment of practice within a community of practice; this action will be discussed as the initial aspect of the technologisation of practice. The mobilisation and refinement of the IBIS then involved the HORT and the community health nurses from across the AHS. Together they enacted an 'IBIS

Users Group', and associated 'IBIS practice network', which realised a second version of the IBIS finalised in 1997, and then a third version at the end of 1998.

After the construction of the IBIS, researchers from the Simpson Centre, based at Liverpool hospital, joined the collaboration. They provided to the HORT and nurses research expertise and analysis of the collected information. The ongoing refinement of the IBIS thus reflects the collaboration of the clinicians, managers and researchers, with the focus and interests of all three groups merged into the one artefact. The mobilisation and refinement actions together are the construction of extended accountability relationships and represent a further aspect of the technologisation of practice.

In essence, the IBIS was refined into a multifaceted resource simultaneously able to be used by clinicians, managers and researchers. For the nurses the IBIS is an artefact that prescribes and standardises clinical practice (Timmermans and Berg 2003). The IBIS provides the nurses, and the families they see, with both structure and content for their interactions in the early childhood clinics. From early 2003 onwards, the community health nurses, their NUMs and other approved managers have been able to access information from the IBIS through a computer program, the 'Reporting Feedback Mechanism', on the AHS network. This program enables the three groups to access information about, and the outcomes of, the early childhood services accessed by the local community. This information can be utilised to manage early childhood services at individual clinic or sector levels. The IBIS is also regarded as a valuable research database by researchers. With the IBIS being implemented across all early childhood services within the AHS, this is enabling the capturing of health information at what the researchers describe as being at 'a population level'. That is, across the AHS all visits to early childhood services by mothers and their babies result in the completion of an IBIS form, and thereby an entry into the database.

This data is then a valuable resource that can be analysed by the researchers to understand the health needs for the maternal and child population within the AHS; for example see Phung, Young, Greenfield, Bauman and Hillman 2001. In summary then, for the AHS the IBIS is a multi-purpose resource that can be used as a clinical practice tool, a service management tool and a population-health research tool. To rephrase, in the technologisation of practice the IBIS is a multidimensional resource - an artefact within a practice (Wenger 1998a), a technology (Hill 1991; O'Malley 1996; Rose 1999), a immutable mobile (Latour 1986) and a co-ordinating device (Timmermans and Berg 2003). The IBIS has made visible the practice of the early childhood nurses and connected them into extended accountability relationships that extend away from the sites of community nursing. The IBIS is both an activity of, and an outcome from, the technologisation of practice.

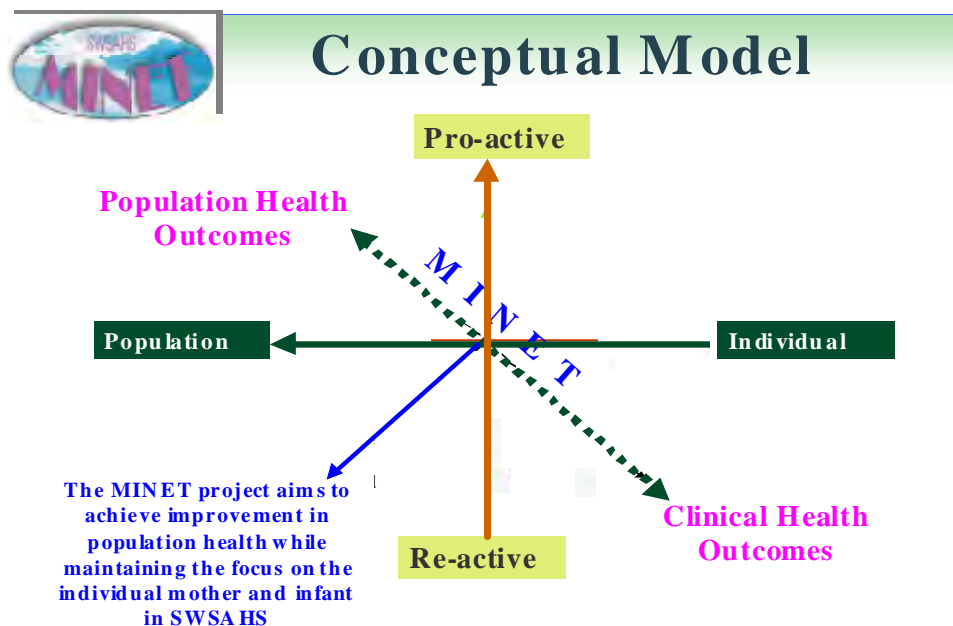
The construction, mobilisation and refinement of the IBIS contributed to the ideas that condensed together and became represented by the MINET program. That is, the IBIS became a technology (Hill 1991; O'Malley 1996; Rose 1999) by which the early childhood nurses became integrated into a maternal and infant continuum of care called the MINET program. This action is part of the second aspect of the technologisation of practice whereby the nurses strengthened their extended accountability relationships with other health professionals beyond their clinics. In this way the IBIS practice network and the MINET program together represent a “constellation of practices” (Wenger 1998a) across the AHS. The next part of this section overviews the MINET program.

2.3 The Mother and Infant Network – The ‘MINET’ program

As has been noted, MINET is the acronym for the Mother and Infant Network, and refers to actions within the AHS to establish a maternal and infant continuum of care. The overall goal of MINET is described as:

... to develop a continuum of care for all mothers and infants within a specific geographical area (SWSAHS) across in-patient, ambulatory care and community based services. (SWSAHS 1999c: 3)

The continuum of care consists of services from the antenatal unit, the birthing unit, post-natal care and early childhood services. The MINET program was formally established by the SWSAHS in 1997, with a decision to guide the development of the program through the 'MINET Area Steering Committee'. The committee has representatives from all relevant stakeholders - administrators, clinicians, researchers, academics and planners, and the Medical Director of the Chisholm Centre for Women and Babies chairs the committee. The MINET Area Steering Committee has responsibility for setting the priorities and coordinating the services and professional groups that are involved in the project. The AHS has diagrammatically represented the MINET program as follows.



Source: SWSAHS (1999b) Maternal and Infant Network (MINET): An integrated Approach to Service Delivery, Evaluation and Research (Discussion Paper). Sydney: SWSAHS.

As represented in this diagram, the MINET program is striving to integrate population health thinking into the clinical practice of the health professionals through the goal of a continuum of care. Within this broad goal MINET has two essential aims, as detailed by Phung et al. 2001. Firstly, MINET aims to assist clinicians in tracking the processes and outcomes of care as an integral part of routine clinical care. All the services along the maternal and infant continuum of care standardised the information they collected, and overall became increasingly integrated with one another. As will be discussed later in the thesis, in this process the IBIS was both a “boundary object” (Wenger 1998a) and an “intermediary object” (Boujut and Blanco 2003) that enabled the construction of a number of similar databases that are an important step towards realising the MINET program.

Through focusing and collecting data on the health outcomes for individual mothers and children this enables the establishment and monitoring of health baselines at the population level. As the MINET model of care is one that integrates the biological, psychological and social health domains, a broad examination of health factors can be undertaken. A key objective that emerges from this approach is the integration of an early identification and intervention focus into routine clinical practice.

The result has been de-identified data sets which track process indicators and outcome indicators for mothers and their children over time. This information is available to clinicians, managers, researchers and planners. (Phung et al. 2001: 107-108)

The development of these data sets enables the second aim of MINET - to use the information and expertise developed to undertake clinical and health service research. Health services research has a multi-focus, encompassing both the individual and the population. Such research seeks to understand the impact of both the process of delivery of services and the organisational structure used to deliver services (Kindig 1999). This knowledge can then be used for ongoing

health systems reform (Hadley 2000). The development of the databases represents the construction of expertise and the collection of practice information makes the practice of the professionals visible to themselves and one another, thereby disciplining their conduct. In this way discipline and expertise are enacted together and will be shown to be an outcome of the technologisation of practice.

The MINET Steering Committee is the infrastructure for communication (Snellen 1994 in Frissen 1999; Tellioglu and Wagner 2001) and the data sets provide the information that unites the work of the different organisational actors across the AHS (Frissen 1999). As part of the MINET program the Steering Committee endorsed the implementation of the IBIS throughout the AHS. The IBIS was identified as a key component that would enable the realisation of the goal and aims of the MINET program. As outlined in the SWSAHS MINET Report (1999c), the committee advocated that the IBIS would standardise the conception of early childhood practice within the sectors and across the AHS, providing standardised information about the services delivered and also detailed information about the maternal and child population, thus enabling health services research.

The previous parts of this section have discussed the context for the research, that is the SWSAHS, the Simpson Centre/ Kidz clinic, the CFHNT, the IBIS and here above, the MINET program. The next part of this section reviews the construction of the research focus.

2.4 Enacting a research focus

This final part of this section reviews the development of the research focus within the Centre for Clinical Governance and the context of the SWSAHS. This includes noting the rationale for the ethnographic methodology utilised. These issues are presented here in this abbreviated form to complete the

contextualisation of the research. The next chapter provides a detailed description of the development of the research, and my development as a researcher, and then chapter three discusses the research methodology in detail.

The research project developed from the collaboration between the Simpson Centre in the SWSAHS and the Centre for Clinical Governance Research in Health (CCGRH) at the University of New South Wales. The CCGRH was formerly called the Centre for Hospital Management and Information Systems Research. The impetus for this research began with the researchers from the Simpson Centre who, as noted, have been in collaboration with the HORT and nurses refining the IBIS and conducting research based on information collected by the IBIS. As a result the IBIS has become a multipurpose resource – a clinical assessment, service management and population-health research tool. In addition to the association to refine the IBIS the nurses, HORT and the researchers have been collaborating with other health professionals formulating and implementing the MINET program. During 1999, the Simpson Centre decided to fund a PhD project to explore the learning and issues of innovation and change that had occurred through the development of the IBIS and the MINET program.

To bring the project into fruition the Simpson Centre collaborated with the CCGRH. Establishing a PhD research project the Simpson Centre provided the funding to the CCGRH, which undertook the ongoing management and supervision of the research. In this way negotiating and gaining access to the research site was a task undertaken prior to my commencement, removing a potentially significant problem noted in other research (Smith and Deemer 2000). I commenced in March 2000 with the initial broad brief to investigate the sociological, organisational, socio-cultural and health reform aspects of the MINET project.

The initial brief reflected the ambitious intentions of the two Centres. As I had no background in the MINET program my immediate and initial task was to understand what MINET aimed to achieve, and how the work related to the academic literature. I adopted a qualitative approach as I was seeking to describe and interpret the situation in the health service, not endeavouring to measure or test within the field setting (Baum 1995; Leininger 1997; Hurley 1999; Shortell 1999; Sofaer 1999; Schultze 2000). The use of such an approach is appropriate as Pope and Mays (1995: 42) note:

Qualitative research offers methods to investigate the dynamics and culture of health organisations.

Furthermore, qualitative research has been acknowledged as offering appropriate methods to investigate developmental and historical processes within organisations and communities (Sofaer 1999). As detailed in chapter three, I adopted a socio-logical ethnographic approach (Creswell 1998). This approach involves looking at what people do, what they say and the artefacts they use in their daily activities, and then constructing a detailed description and interpretation of the community under study (Spradley 1979; Lincoln and Guba 1985; Hammersley 1992; Janesick 1994; Hammersley and Atkinson 1995; Keen and Packwood 1995; Leininger 1997; Creswell 1998; Crotty 1998; Davies 1999; Morse 1999; Sofaer 1999). In this way ethnography is both a process by which to conduct research and an outcome, which in this case is a text, in the format of a thesis, of the research (Agar 1980; Boyle 1994; de Laine 1997).

As I investigated the MINET program, the importance of the IBIS to the SWSAHS emerged. Influenced by my participation in the CCGRH community and the necessity of a manageable research project, the IBIS became a focus for my research. I focused the research to examine the construction, mobilisation and refinement of the IBIS, a historical and ongoing activity, and then the use of the IBIS by one nursing team. That is, the proposed implementation of the IBIS across the AHS, or in my terms the mobilisation of the practice artefact, enabled

the research perspective to expand and examine the unfolding experiences of the nurses as being lived now. This expansion shifted the research focus on to the CFHNT who provide the early childhood services in community health for the Liverpool sector of the SWSAHS. To summarise this in more abstract terms, the research has examined change and innovation through the technologisation of practice.

This section has outlined the research context, including noting how the IBIS and the CFHNT came to be the empirical focus of the thesis. The next section discusses the guiding argument of the research, which is defined as the technologisation of practice.

3. The guiding argument of the research

This section now details the guiding argument of the research, the thesis of the thesis. The first part begins by presenting the reasons for the research, including the two questions that the research seeks to answer. Then the four theoretical perspectives that provided a point of departure for the research, that is, the idea of a “community of practice” (Lave and Wenger 1991; Wenger 1998a), Latour’s (1986) “immutable mobile” concept, and the notions of “governmentality” (Foucault 1979; Rose 1996, 1999) and “governance” (Rose 1999; Courpasson 2000; Flynn 2002) are outlined. This leads into discussing the thesis of the thesis, as represented by the term the technologisation of practice.

3.1 Reasons for the research

The literature on change management contains a proliferation of ‘tools’ by which to seek change (Hendry 1996; Dunphy 1996). The application of these tools essentially rests upon Lewin’s (1958) model of change (Burnes 1996; Hendry

1996), whereby Lewin proposed that change goes through three phases - unfreezing, change and refreezing. In this literature the tools include the following: diffusion of innovation model (Rogers 1983); punctuated equilibrium model of change (Tushman and Romanelli 1994); model of the learning organisation (Senge 1990; Senge, Kleiner, Roberts, Ross and Smith 1994); improvisation model for change management (Orlikowski and Hofman 1997); matrix of change (Brynjolfsson, Renshaw and Van Alstyne 1997); model of work place learning (Raelin 1997); bottom-up entrepreneurship (Sarbaugh-Thompson 1998); and the two theories, E and O, of change (Beer and Nohria 2000). The tools are stereotypical and prescriptive in orientation (Sinclair 1994) and reportedly limited in success (Hammer and Champy 1993; Kotter 1996; Cicmil 1999). They have a focus primarily on the 'how' of change, excluding the processes and outcomes of change projects (Wilson 1992; Cicmil 1999).

An underlying assumption of these tools is that people fear and resist change and thus this assumption is used to rationalise and legitimate downward controlling and authoritative methods used to achieve change (Ford and Ford 1994; Hendry 1996; Beech 2000; Axlerod 2000). Interestingly this is at odds with the language of many of the models, which speaks of participation, teamwork and trust; the content and the implementation process for the models are inconsistent and actually appear opposed. A significant consequence of this imposed approach to change is that knowledge about successful implementation of innovation and change initiatives is scarce (O'Toole 1997; Clarke and Meldrum 1998; Sarbaugh-Thompson 1998).

Notably there appears to be little to no difference between the public and private sectors when considering innovation and change projects (Cohen and Golembiewski 1984; Pettigrew, Ferlie and McKee 1992; Dobuzinskis 1997; Wise 1999). However, management and political ideology contends that the private sector is more efficient and effective than the public sector. Within this ideology is the belief that the public sector bureaucracy is extremely difficult to innovate and

slow, if not impossible, to change. Different researchers, for example Frissen (1999), Rainey (1999) and Wise (1999), have examined the research and theory on innovation and change in the public sector and come to similar conclusions.

It is equally possible to strike a positive, generous, even enthusiastic note when talking about developments in public administration over the past decades. And then one is struck in particular by change, experiment and innovation. (Frissen 1999: 9)

Therefore, while the literature clearly states that there is greater resistance to innovation and change within the public sector as opposed to the private sector, there is no evidence to support this notion (Frissen 1999; Rainey 1999; Wise 1999).

While there is recognition of a long history of research into change in health care settings (Pettigrew, Ferlie and McKee 1992), information related to empirical research is limited (Casebeer and Hannah 1998). As a result, there has been an increasing recognition of the need for research into processes and strategies to implement changes within health (Rochon and Oxman 1997; Casebeer and Hannah 1998; Wise 1999; Carignani 2000; Grol and Grimshaw 2003). Indeed the literature records there is a need for research to understand the change processes and factors that influence these processes in public sector organisations in general (Wise 1999; Brown, Waterhouse and Flynn 2003).

In addition, other researchers have argued for studies into public sector organisations with the focus on knowledge management issues.

Much of the literature in the area of knowledge management has focused on the private sector, where it is reported and often suggested that the implementation of knowledge management facilitates growth, drives up revenue and creates competitiveness. But few have suggested what outcomes a

public-sector service organisation should expect. And fewer still have investigated how knowledge management can operate in organisations that provide health care. (Van Beveren 2003: 90)

In contrast to the focus on private organisations identified by Van Beveren, this research is focused upon a health organisation in the public sector. The research is exploring how change has occurred through the construction, mobilisation and refinement of explicit knowledge and the changing dimensions of tacit knowing represented by, and associated with, a practice artefact, that is the IBIS. In exploring change in this way the research has the potential to influence health care practices, and, while different in focus, reflects a similar orientation to that of Porter (1997) and Cheek (1997).

A number of researchers have similarly highlighted the importance of such issues. Blackler (1995), Schultze (2000) and Gherardi (2001) have all suggested that research should seek to examine the active process of 'knowing', whereby employees from different domains of expertise engage in collaborative endeavours as they seek to utilise their different histories and experiences. Such an undertaking is significant, with an increasing number of studies calling for more research from a process perspective to pursue the investigation of knowing (Brown and Duguid 1991; Blackler 1995; Barley 1996; Leonard and Sensiper 1998; Clancey, Sachs, Sierhuis and van Hoof 1998; Richter 1998; Cook and Brown 1999). One that has undertaken this is that by Choi and Lee (2002), while other researchers have utilised this perspective to explore management issues (Ropo, Eriksson and Hunt 1997) and organisational change (Dawson 1999). However being able to determine under what conditions people in organisations share their knowing remains important but largely unresolved (Dixon 1997; King and Rowe 1999; von Krogh 2002; Wenger, McDermott and Snyder 2002).

There is a need to examine more closely both tacit knowing and creativity as they are expressed by members of groups – singly and collectively. (Leonard and Sensiper 1998: 115)

For some time now the argument has been made that the focus of research needs move away from individuals' tacit knowing to explore how groups or teams practise (Cook and Yanow 1993; Barley 1996; Hendry 1996; Leonard and Sensiper 1998; Richter 1998; Hall 2001; Jones 1997b in McCallin 2001). This research takes up this entreaty by focusing upon a professional group and then specifically one team, or community, of early childhood nurses and how they have technologised their practice. To realise this focus the research draws upon the community of practice concept (Lave and Wenger 1991; Wenger 1998a), which is discussed in chapter four. The use of the community of practice concept has grown almost exponentially over the last few years, with an increasing number of organisations and researchers exploring the possibilities and potential of the concept. This research is one such undertaking, and exploring practice within a health service organisation, and in particular a public health service organisation, is a particular feature of this research.

Similarly, but from a slightly different perspective, Aarts and Peel (1999) have previously noted that there is a dearth of research on organisation issues associated with health information systems; that is, research that takes a qualitative exploration of the technologisation of clinical care. Research into health information systems has tended to focus upon the technical aspects rather than the organisational and practice impacts of such systems (Aarts and Peel 1999). This research is one project that attempts to explore the latter endeavour and to this end, the use of a qualitative approach has been increasingly noted (Ridsdale and Hudd 1997; Goorman and Berg 2000; Lee, Yeh and Ho 2002). The research seeks to explore the interaction between people and the artefacts they construct, refine and are shaped by (Latour 1986, 1992; Gagliardi 1997; Araujo 1998). May and Ellis (2001) point to Yoxen (1987) who identified the importance of understanding the practices and processes by which technologies come to be stabilised, and take on an unremarkable character in various contexts (Braa and Vidgen 1999). Pursuing this endeavour, this research seeks to make visible how practice is constituted and mediated by technologies that are appropriated and mobilised as resources for practice. In this way this research is

also one response to a call from Latour (1986). He has noted an increasing trend in computerised processes in many different fields, and has argued for further research into such processes.

As is explained in chapter four, pursuing this practice perspective the research is informed by a postmodernist view of organisations and a community view of knowledge. Together they interweave to inform the research with a view that practice is enacted within a community, learning is identified as a social process, organising is the negotiation of meaning, and knowing is enacted and cannot be separated from practice. With this view, there are two interrelated questions that this research seeks to address. The first question is, as articulated by Pan and Leidner (2003: 13), “what are the processes and mechanisms needed in order for employees to share their common knowledge with their peers in other communities of practices?”, or alternatively, what enables people within an organisation to share their knowing (Dixon 1997; Leonard and Sensiper 1998; King and Rowe 1999; von Krogh 2002; Wenger, McDermott and Snyder 2002). Then the second question is, how is practice established and sustained in a specific context? (Maudsley and Strivens 2000; Hayes and Walsham 2001), or alternatively, how does knowledge become formulated and mobile? (Araujo 1998).

In addressing these questions the research seeks to explain how knowledge becomes formulated and thereby mobile, and also how practice has come to be established, visibilised and thereby sustained in a specific context. That is, the research will show that through the technologisation of practice explicit knowledge becomes distributed within the artefacts for practice and tacit knowing becomes distributed across, and is continually enacted by, the collaboration of the community.

This initial part of this section has noted the reasons for the research, and now the theoretical points of departure of the research are discussed.

3.2 *Theoretical points of departure*

With the research having unfolded to focus on the interrelationship of learning, practice, organising and knowing, a host of interrelated questions transpired. The questions were along the following lines: What was the impetus that enabled the construction and refinement of the IBIS artefact? What were the processes that made possible or facilitated the interactions? How did the IBIS artefact affect the practice of the nurses? How did the practice of the nurses in different locations become constructed, refined and sustained?

The exploration of the academic literature, influenced by such questions, the fieldwork and the CCGRH community led to the identification of the “community of practice” (Lave and Wenger 1991; Wenger 1998a), “immutable mobile” (Latour 1986), “governmentality” (Foucault 1979; Rose 1996, 1999) and “governance” (Rose 1999; Courpasson 2000; Flynn 2002) as key theoretical beginning points for this research. Each of these will now be discussed.

3.2.1 *The community of practice concept*

The community of practice concept has been explained as follows.

Communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic and who deepen their knowledge and expertise in this area by interacting on an ongoing basis. (Wenger, McDermott and Snyder 2002: 4)

The idea of a community of practice highlights the inseparableness of individuals and their socio-physical context, and in doing so provides an explanation how communities continually reproduce themselves through the process of “legitimate peripheral participation” (Lave and Wenger 1991). Participation constructs social relationships and through these relationships practitioners learn ways of thinking,

interacting and working (Orr 1990; Hutchins 1995). That is, through participation in the activities of practice people become members of a community of practice resulting in a united experience of practice, learning and knowing (Lave and Wenger 1991; Wenger 1998a).

The community of practice concept offers a way of describing and interpreting the changes in early childhood practice that occurred through and with the IBIS.

The value of the communities of practice framework for research is that it encourages investigators to focus on the local practices and concrete activities in which groups of people are mutually engaged, and it thereby helps researchers avoid a-priori characterisations of individuals as well as generalisations about social categories. (Freed 1999: 257)

Using the community of practice concept, the focus for the research is the “local practices and concrete activities” of the early childhood nurses in the Kidz clinic, across the AHS and then those of the CFHNT. That is, the research explores the construction, mobilisation and refinement of the IBIS artefact, and the associated changes in practices and relationships that this has entailed. To this end, my use of the community of practice concept directs attention to the conduct and practices of the nurses as a group, not as isolated individuals.

3.2.2 *The practice of inscription, or immutable mobiles*

Bruno Latour through focusing upon the practice of inscription has developed the notion of an “immutable mobile” (1986) to explain the way people rematerialise, or “resemiotise” (Iedema 2001, 2003; Iedema and Scheeres 2003), understandings into portable, durable and technical tools.

In sum, you have to invent objects which have the properties of being *mobile* but also *immutable*, *presentable*, *readable* and *combinable* with one another. (Latour 1986: 7; italics in original)

Through identifying the IBIS, and other resources, as immutable mobiles, Latour's (1986) ideas are used to illuminate the cathartic value they have for the community health nurses. The power of immutable mobiles is that they allow "translation without corruption" (Latour 1986), thus enabling the gathering of that which is from many distant places into the one place at one time and the establishment of a two way connection. In this action the three dimensional world is made less transient by focusing upon two-dimensional representations, that is, inscriptions on paper and more recently those within a computer. This process of inscription and collation is how characteristics of the world are made visible to the nurses themselves and people in distant locations. The importance of the combinable characteristic, and for the IBIS at least this is magnified by having been computerised, is that the inscriptions can be collated together thereby allowing new and harder facts to be produced. In other words the real is made abstract, or "resemiotised", and in doing so becomes increasingly defined in a meta-discourse.

3.2.3 *Governmentality and governance*

The notions of "governmentality" (Foucault 1979; Rose 1996, 1999) and "governance" (Rose 1999; Courpasson 2000; Flynn 2002) are then drawn upon to interpret the conduct and activities of the nurses.

Government here is a way of conceptualising all those more or less rationalised programs, strategies, and tactics for 'the conduct of conduct', for acting upon the actions of others in order to achieve certain ends. (Rose 1996: 12)

A governmentality approach involves exploring the ways in which power penetrates into all aspects of life, shaping the thoughts, actions and wishes of individuals and the population. Governmentality involves the intersection of managing the population and the individual's management of themselves. In doing so governmentality requires knowledge, and therefore relies on techniques to describe and make visible the knowledge and knowing population in question. O'Malley (1996: 205) offers this explanation of technologies:

..any set of social practices that is aimed at manipulating the social or physical world according to identifiable routines.

Establishing routines involves linking forms of knowledge with artefacts, devices and human actions to produce practical outcomes in terms of human conduct. For example, integrating the knowledge of psychology into forms for nurses to consistently observe, assess and inscribe the experience of the mothers they see.

Governance is utilised with governmentality to highlight the increasing collaborative participation of the participants in conceptualising and constructing their own knowledge and discourse; that is, simultaneously expertise and discipline are realised together. In this way governance is related to the notion of governmentality, and has been described by Rose (1999: 17) as follows:

Governance refers to the self-organising networks that arise out of the interactions between a variety of organisations and associations.

Governance is being used in a descriptive sense, and is seeking to understand the patterns and structure that emerges from the interactions of a range of actors, including the State (Rose 1999; Courpasson 2000).

From these theoretical points of departure, the research has unfolded and the thesis of the thesis has been constructed. This next section now details the thesis.

3.3 *The technologisation of practice*

The third part of this section now presents the thesis of the thesis, which may be stated as follows: this research demonstrates how collaboration becomes necessitated under pressure of enacting increasingly complex work activities, an outcome being changing practices and extended relationships of accountability, which enacts discipline while realising expertise.

The technologisation of practice is the term I have constructed to use and define this integrated process and outcome. That is, in this research the technologisation of practice refers to the artefacts, conduct and processes through which the conceptualisation and enactment of early childhood nursing has become increasingly standardised. There are four interrelated aspects to the technologisation of practice.

Firstly, the technologisation of practice involves standardising the conceptualisation and enactment of practice through constructing a multi-dimensional practice resource within a community of practice. The research shows that this is achieved through the following process. People engage in learning-in-working activities, collaborating to construct a prototype artefact. The prototype is transformed into an artefact within a practice through constructing and enacting standardised technologies.

Secondly, the technologisation of practice involves the mobilisation and refinement of the multi-dimensional practice resource to realise a practice network involving extended relationships of accountability. The notion of

extended relationships of accountability refers to the fact that practice becomes interdependent between professionals, or services, in different locations. That is, the work undertaken in one place impacts upon and shapes the enactment of work in another place. Such relationships are made possible by immutable mobiles, such as the IBIS, that enable practice to become visible and transportable between different locations. These relationships of accountability are within a profession and also with other professionals.

Thirdly, the technologisation of practice involves the amalgamation of the organising and service delivery roles within a collaborative community of practice, that is, accountability becomes an ongoing collective achievement. The research shows that a team can become a collaborative community by constructing an accountability context, reorganising and facilitating the team, and then amalgamating the organising and service delivery activities through integrating formal meetings and informal interactions.

Fourthly, the technologisation of practice involves the collaborative community assemblage and/or appropriation of further technologies into practice, thereby strengthening the local and extended relationships of accountability and expanding the boundaries of practice.

The research describes how the technologisation of practice is the enactment of a number of mutually enabling practice dualities, which together simultaneously discipline and realise expertise (Poster 1990 in Sewell 1998; Barker 1993; Sewell 1998; Johnson 2001). The idea of a duality is used to consider two items that are not defined as opposites of each other, but rather are complementary, take place together, and require and enable each other (Giddens 1984; Wenger 1998a; Schultze 2000). The interrelated practice dualities are individual-community, subjective-objective, local-global, formal-informal and governmentality-communal self-governance.

The individual and their immediate community is shown to need each other to construct and refine their practice; an individual cannot practise effectively without collaborating with their colleagues, as the community, which is formed through the participation of all members, holds the tacit knowing necessary for practice.

The situatedness of practice is shown to necessitate a subjectivity-objectivity duality, whereby individual and communal experience is drawn upon to see through the otherwise opaque nature of statistics and information.

Competency in practice requires being able to interpret distant information, or boundary objects, and enact a local response that is simultaneously aligned with the local community and the broader organisation. In this way competency realises a local-global duality, whereby the community's local understandings are informed and shaped by distant issues.

The formal-informal duality is a mechanism by which practice is increasingly collaboratively conceptualised and enacted, and thereby standardised. Formal meetings and informal interactions are necessary together to construct accountability to the community and associated practice.

Individual and communal 'expertise' becomes realised through the assemblage and appropriation of tools, artefacts and technologies. At the same time, the community in defining the use of such resources as competent practice is disciplining this conduct. Through this action a governmentality-communal self-governance duality is realised as the nursing community pursues expertise while disciplining themselves; by engaging in collaborative interactions and using standardised tools and artefacts the community constructs and makes visible their knowing and practice.

The final section of this chapter presents the organisation of the thesis.

4. Organisation of the thesis

The thesis is composed of nine chapters. There is firstly this introduction, chapter one, which overviews and outlines the thesis.

Chapters two and three are related, with both concerning the ethnographic methodology of the research. Chapter two is a reflexive chapter and is part of the audit trail of the research. In this chapter I have utilised the style of “vulnerable writing” (Behar 1996; Schultze 2000) to reflect upon the experience of doing the research. That is, this chapter is an account of how I have negotiated the “politics of location” (Marcus 1994) developing the research and constructed an identity as a ‘researcher’. That is, this chapter is an exploration of the technologisation of practice that I myself have undergone through the research process. I similarly have constructed a meta-discourse - comprised of artefacts, conducts, concepts and processes - that has disciplined and realised my expertise. My insight into the technologisation of practice for the nurses has come about through reflecting upon my own experience and the construction of this thesis.

In chapter three the methodology is outlined. This involves discussing the genealogy of ethnography, the socio-logical ethnographic approach adopted in the research, the data collection and analysis processes, the steps taken to ensure the rigour of the research, consideration is given to the limitations of the research and, finally, the ethical issues of the research.

Chapter four has four purposes. Firstly to detail the theoretical starting points for the research, secondly to discuss the perspectives that inform the research, thirdly to detail the two questions the research seeks to answer and fourthly to present the argument of the thesis.

The following four chapters, from five through to eight, present the empirical details of the research. These chapters show how change has occurred through

the increasing technologisation of practice. Each chapter takes as a focus one aspect of the technologisation of practice. Chapters five and six are linked through taking the IBIS artefact as the empirical focus. Then chapters seven and eight are similarly interlinked through taking the CFHNT as the empirical focus.

Chapter five explores the first aspect of the technologisation of practice, the action of standardising the conceptualisation and enactment of practice through constructing a multi-dimensional practice resource within a community of practice. That is, the construction of the IBIS artefact within a community of practice. Then chapter six focuses upon second aspect of the technologisation of practice, the mobilisation and refinement of the multi-dimensional practice resource to realise a practice network involving extended relationships of accountability. That is, the mobilisation and refinement of the IBIS artefact. The construction, mobilisation and refinement of the IBIS artefact, required and enabled new practices and relationships. The construction of the IBIS was the enactment of an 'IBIS community of practice', and then the mobilisation and refinement of the IBIS saw the enactment of further 'IBIS communities', which together comprise the 'IBIS network'. The early childhood nurses' collaboration and participation in the IBIS network contributed to the interlinking of the maternal and infant health services into the MINET program. Together the IBIS network and MINET program make up a "constellation of practices" (Wenger 1998a) across the AHS.

Chapter seven explores the third aspect of the technologisation of practice, the ongoing enactment of accountability in a collaborative community of practice. That is, how for the CFHNT to enact their practice necessitated the reorganising of responsibility and their collaboration and participation in formal meetings and informal interactions. By collaborating practice becomes an ongoing collective achievement and is the enactment of accountability. While this aspect is similar to the first aspect explored in chapter five, as both consider a community of practice, the difference is significant in two interrelated ways. Firstly, this third

aspect focuses on the construction of the community, rather than of a multi-dimensional resource. Secondly, this third aspect highlights how accountability became an ongoing collective achievement by the community. Accountability is enacted by the integration of the organising and service delivery roles, which is necessitated by the increasing complexity of practice.

Chapter eight explores the fourth aspect of the technologisation of practice, the collaborative community assemblage and/or appropriation of further technologies into practice, thereby strengthening the local and extended relationships of accountability and expanding the boundaries of practice. That is, the CFHNT assemblage and appropriation of artefacts and tools, or technologies, realised their practice and expertise, and engaged them in a project of governing the population. The CFHNT became enrolled in a dual alliance, via the political strategy of Families First, with the State and AHS, and the families they provide services for. In doing so, the CFHNT have constructed a specialised discourse that enables them to realise the collaborative self-governance of their community.

Finally, chapter nine draws the research ideas and discussion together and considers possibilities for future research.

5. Conclusion

This concludes this introductory chapter that has provided an explanation of the research context, the development of the research, presented the guiding argument of the research, and the two questions the research seeks to answer. The next chapter is a reflexive chapter that is part of the audit trail of the research. This chapter explores the “politics of location” (Marcus 1994) and is a self-reflexive chapter that adapts the style of “vulnerable writing” (Behar 1996; Schultze 2000) to detail the enactment of my research expertise within the CCGRH and across the research site of the SWSAHS.

Chapter Two: Realising research expertise

May we suggest a different approach to ethnography and the use of qualitative methods, one that conceives of the observer as possessing a self-identity that by definition is re-created in its relationship with the observed – the other, whether in another culture or that of the observer. (Vidich and Lyman 2000: 38)

By including our own role within the research focus, and perhaps even systematically exploiting our participation in the settings under study as researchers, we can produce accounts of the social world and justify them without placing reliance on futile appeals to empiricism, of either positivist or naturalist varieties. (Hammersley and Atkinson 1995: 21-22)

1. Introduction

This chapter aims to provide a reflexive account of myself in the research process revealing how I became a 'researcher' (Franklin 1996; May 1997; Wainwright 1997; Altheide and Johnson 1998; Davies 1999; Mays and Pope 2000; Bloor 2001; Macdonald 2001; Manias and Street 2001; Spencer 2001). This chapter is part of the decision trail or audit required in ethnographic research (Lincoln and Guba 1985; Sandelowski 1986; Morse and Field 1995; de Laine 1997; Hill Bailey 1997; Denscombe 1998; Clarke 1999; Ritchie 2001). Chenail (1994: 5) describes the importance of a clear audit as follows:

I mean that you communicate as clearly as you can what it was that you did to create your project, what were your choices along the way, what else you considered doing in the project but chose not to.

With the aim of communicating the 'actions taken and choices made' in the research, this chapter is presented.

As a graduate research student, I joined the CCGRH at the UNSW in 2000. This centre became my community of practice through which I came to construct and develop the research and thesis. Membership of this community and university bestowed on me the authority and legitimacy to pursue the research in the field setting of the SWSAHS, primarily involving the members of the Kidz clinic, including the HORT, researchers in the Simpson Centre and the CFHNT nursing community. Participating in these settings has involved constructing and enacting research practices, and in doing so, this has been the development of myself as an "expert" (Rose 1999) and involved an expansion of identity (Wenger 1998a), from 'clinician' to be both a 'clinician and researcher' (Cusick 2001).

This chapter describes the enactment of this expert researcher role as I explore how as a 'researcher' I became structured into a position of "legitimate peripheral participation" (Lave and Wenger 1991) in the CCGRH and the SWSAHS. Legitimate peripheral participation offers an explanation as to how newcomers learn the norms, values, language and conduct necessary to participate in the community.

Legitimate peripheral participation refers both to the development of knowledgeably skilled identities in practice and to the reproduction and transformation of communities of practice. (Lave and Wenger 1991: 55)

Legitimacy speaks of access to a community; only with access can a new member participate in the community to become a full member of the community. The term peripheral highlights the necessity to be exposed to the totality of practice, with all the nuances and complexity that this includes. Participation enables the construction of relationships and involvement in the activities of the community, including the negotiation of meaning within the community. Through

legitimate peripheral participation in a community of practice a person learns and constructs a new identity by becoming part of a social world (Brown and Duguid 1991; Lave and Wenger 1991; Gherardi, Nicolini and Odella 1998; Wenger 1998a). Through this process I was provided with access to an academic community, exposed to the practice of that community and participated to construct this thesis and my research expertise.

As outlined in the introductory chapter, the technologisation of practice is a way to explain how change, learning and knowing occurs. That is, through engaging with people in a specific location and the construction, or importation, of technologies, practice is shaped and disciplined, and expertise unfolds. My construction of this idea is based on my observations of the participants and also reflection upon my experience of the research. This chapter aims to highlight that the technologisation of practice, for myself as for the nurses, is the result of the simple, pragmatic and ordinary events and decisions that make up our daily work activities. I have chosen to portray this reflective process in the thesis adapting the style of “vulnerable writing” (Behar 1986; Schultze 2000) to produce this chapter of the thesis.

The outline for the chapter is as follows. Firstly, in section two the reasons for this undertaking and then an account of myself (Patton 1999; Schultze 2000) is presented. Then section three outlines the process of becoming a researcher in the CCGRH community and the field settings of the SWSAHS, including discussing how the research was enacted. This leads into the final section, which identifies the process of how my research expertise has been realised.

2. Becoming the 'researcher'

The "me" in the research influenced the choice and focus of the topic, the relationships in the field, and the content and analysis of the data and finally writing up the research. I judged it would be immoral and deceitful to ignore the initiator and fundamental shaper of events. For the readers to accept the research as valid, they must be able to scrutinise the integrity and philosophy of the researcher so that the findings are trusted. (Chesney 2001: 127-128)

This exploration, while personal, is important because I recognise that my personal and professional background has shaped and influenced the process of the research and the writing of the thesis (Lipson 1991; Bradley 1993; Williams 1993; Boyle 1994; Denzin and Lincoln 1994; Hammersley and Atkinson 1995; Davies 1999; Shaffir 1999; Amit 2000; Cheek 2000; Madill, Jordan and Shirley 2000; Mir and Watson 2000; Savage 2000; Schultze 2000; Higgs, Titchen and Neville 2001; Manias and Street 2001). That is, within ethnographic research the person is the instrument (Brown 1984; Lincoln and Guba 1985; Bradley 1993; Chenail 1994; Atkinson 1997; Denscombe 1998; Shaffir 1999; Savage 2000; Ritchie 2001). I recognise that had a different person conducted the research, even had they chose to explore the same issues as I have, they would have constructed a different research project (Altheide and Johnson 1998; Schultze 2000; Rock 2001; Spencer 2001; Finlay 2002). Their unique personal history, understanding, interests and skills would have them offering an alternative explanation (Sutton 1993; Ropo, Eriksson and Hunt 1997; Hardy and Leiba-O'Sullivan 1998; Schultze 2000; Spencer 2001; Wilson 2001).

This description is as much a narrative of an ongoing and incomplete process as it is about producing a final outcome of the research, the thesis. This research and thesis has been the result of thoughts, interactions and actions of a large number of people, including obviously the major contribution by myself. Marcus (1994) has described this activity as the "politics of location", that is, the socially

constructed process by which the research is constructed and develops in a particular place and time, and through direct actions (Denzin and Lincoln 1994; Punch 1994; Hammersley and Atkinson 1995; Davies 1999; Amit 2000; Manias and Street 2001).

Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. (Denzin and Lincoln 1994: 4)

I have shaped and influenced this research, within a unique setting comprising the CCGRH and the SWSAHS, necessitating the need to provide an account of myself (Patton 1999; Schultze 2000) and to reflect upon the impact that I have had (Chenail 1994; Marcus 1994; Johnson 1997b; Koch and Harrington 1998; Cutcliffe and McKenna 1999; Ahern 1999; Cheek 2000; Chesney 2001; Finlay 2002). Madill, Jordan and Shirley (2000) have argued that this subjectivity, far from being a negative, offers a valuable resource for understanding between researcher and participants. Similarly, Denzin (1989) states value free interpretation is impossible, that the researcher's values and prior interpretations must be examined to understand how they have affected the research (Bradley 1993; Denzin and Lincoln 1994; Berstein 1999; Finlay 2002). With this perspective, my ultimate aim is that I construct and present an honest story or account of the research, not the 'absolute truth' (Cheek 2000; Jorgensen 2002).

Accounting for myself as the 'researcher' increases the credibility of the research (Patton 1999; Schultze 2000), and acknowledging the personal reasons for undertaking the research assists in assessing the research that eventuates (Davies 1999). How I have shaped and influenced the research involves considering firstly how my personal history brought me to the research (Amit 2000).

I am a male Anglo-Saxon born and raised in Australia, with a Christian upbringing through private schools. While not from a wealthy or privileged background by any means I recognise that I have had a relatively easy life, certainly when I contrast myself with many of the people I have dealt with professionally. Upon completing school, I attended university, graduated and obtained work. Since then I have worked while studying on and off for the majority of my adult life. I came to live in Sydney at the request of my partner as her elderly parents live here. In undertaking formal tertiary education I have pursued a broad range of interests, having completed degrees in science (maths and physics), arts (government/ political science), social work (individual and family therapy) and more recently, studies in information technology. As this description would indicate, my interests have spread across the sciences and humanities, with no definite trajectory or goal in mind. I recognise that this has become a strength and weakness, as I have not directed my energy to specialising in one particular field, but developed interests across a broad area.

My professional occupation has been as a social worker and as such I have lived in three states of Australia - Queensland, Western Australia and New South Wales – and worked in the areas of family conflict and violence – parent-adolescent mediation, family counselling, domestic violence counselling and child protection work. Working in these areas I have developed interpersonal, investigation, assessment and interviewing skills. Becoming a ‘researcher’ has required the adaptation and translation of skills developed for, and through, this ongoing professional role. I believe that these skills have provided a firm grounding on which to undertake ethnographic fieldwork, a point reinforced previously by Lipson (1989) who has noted the skills common to both roles. Importantly this background has, I think, given me the capacity to tolerate ambiguity, a critical skill for fieldwork (de Laine 2000), and to manage the complexity associated with ethnographic research (Harvey and Myers 1995).

I have come to do this PhD as a result of a mixture of luck, desire for a personal challenge and a broad interest in the areas the research brief covered. Fortuitously, my partner came across an advertisement for the research scholarship when rather aimlessly reading the paper one Saturday. My interest was sparked by the description of the research brief, and on reflection I recognise that what I did was to read myself into the research; that is, I interpreted my work, educational experiences and interests as enabling me to undertake the research. At the time, I could only articulate an interest in the areas outlined in the research brief. I did not possess a discourse to expand upon this broad interest. I was enticed by the personal-professional challenge that such a project offered and my personal circumstances, both social and economic, were such that they allowed me to seriously pursue the opportunity.

Prior to undertaking the research I was employed as a clinician, as a senior social worker in a child protection unit in a major children's hospital. I had been working at the hospital for nearly two and a half years in this role. However, I was unfamiliar with the topics such as 'clinical governance' and 'health services research' before to joining the CCGRH, and certainly I had no knowledge of the IBIS and MINET program in SWSAHS. As a result, I have come to this research without ties to either the CCGRH community or the Simpson Centre, and further still I was completely unconnected to the organisational context of the SWSAHS prior to commencing (Bradley 1993; Morse 1994; de Laine 2000). This means that my entry into the research has provided me with an independence and freedom (Hammersley and Atkinson 1983; Hurley 1999) that enabled the research to initially proceed free of local agendas (Bogdan and Taylor 1984). As the paragraph details in leading to this point, I was not bound by having worked in AHS and having been involved in any way with the MINET program or the IBIS. That is, I had no connection to the politics associated with the development of either and so was not pursuing or continuing an established agenda (that someone who had worked in the AHS and associated with either MINET or the IBIS may have been).

As the research focuses on the work and practices of a group of professional people, I have been able to use my own experience as a professional, and also to draw upon the experience of colleagues, to seek to understand the issues and events that I have observed. This includes my personal experience having worked as a social worker, within the health system and other government and non-government agencies, with a similar client group. That is, I have worked with the client group the early childhood nurses are engaged with and I am aware of the social, health and developmental issues that are the focus of their work. From this immediate experience I have a familiarity with the diversity of roles that nurses occupy and their work duties. As I have not sought to investigate the clinical practice of nursing but rather how as a group of professionals they negotiate, organise and have technologised their practice, understanding the intricacies of their clinical nursing work has not been necessary. In this way, I believe that my work experiences have provided a sound basis from which to begin the research process. An unexpected outcome for me from the research has been that my clinical social work practice has improved as I have directly witnessed the benefits of the early childhood nurses involvement with families. Also, as a clinician I am impressed by the IBIS artefact, appreciating the complexity of clinical practice that it is able to represent, and I now have an understanding of the negotiations that are required for such an artefact to be constructed.

The research is further informed due to the fact that I have access to other forms of information about the research context and broader health system, primarily from colleagues at the university and also colleagues that work as clinicians in other health services. This “macro understanding” has been a valuable resource to be drawn upon when conducting the research (Hanson 1994).

This section has explored how I have become the researcher in this ethnography. The next section details the unfolding of the research process in the CCGRH community and across the sites in the AHS.

3. Enacting a research focus

...it is worth noting that the selection (of research questions) is nearly always a combination of personal factors, disciplinary culture and external forces in the broader political, social and economic climate. (Davies 1999: 27)

My development of the technologisation of practice concept has in part been based on my reflection on the unfolding of the research and how the context and events have shaped and disciplined the outcome. This section explores the empirical unfolding of the research, detailing how the combination of personal choices (Chenail 1994; Miller and Dingwall 1997) and factors and events (Comaroff and Comaroff 1994; Punch 1999; Amit 2000; Rock 2001) have shaped the research process.

Enacting the research role involves occupying the two interrelated settings of the academic community and the fieldwork context, these being the CCGRH community and the SWSAHS respectively. In the SWSAHS context there are two physical locations - the Simpson Centre, where I was based when exploring the historical construction of the IBIS, and the CFHNT in community health of the Liverpool sector. Together, along with the CCGRH, these locations have framed and shaped the research. Participation as a researcher has involved simultaneously negotiating and moving within and between these three settings (Spradley 1980; Williams 1993). One aspect of participation common to all three settings has been that participation has relied upon the settings opening and providing assistance within them (Lave and Wenger 1991; Wenger 1998a). Participation required more than just my being present or granted physical space within the different locations. I relied upon the actions and interactions with others to be able to participate and enact the researcher role. Through and with others I became a researcher doing a PhD and the research knowledge and knowing was co-produced within these specific settings (Lave and Wenger 1991; Finlay 2002).

This section explores the process and dynamics involved in becoming a 'researcher' in these locations, and the idea of "legitimate peripheral participation" (Lave and Wenger 1991) is drawn upon to this end. There are five parts to this section. Firstly, participation within the CCGRH community of practice is explored. The second part considers the engagement with the HORT and the researchers of the Simpson Centre. Then the third part discusses the focusing of the research onto the IBIS, and the fourth part explains how the CFHNT came to be an important local context. The fifth and final part of the section discusses participation with the CFHNT community.

3.1 Participation within the CCGRH community

The CCGRH is based in the Faculty of Medicine at the UNSW. The members of the CCGRH collectively engage to undertake research into health services and teaching in the graduate programs. The joint enterprise of the CCGRH is to research and promote clinical governance within health services. The shared repertoire is the empirical research projects they are undertaking informed by their academic discourses from their diverse professional backgrounds. As such, the CCGRH can be understood as a community of practice (Lave and Wenger 1991; Wenger 1998a).

I came to engage with the CCGRH community when I took up the role of a graduate research student undertaking a PhD. This was a position of legitimate peripheral participation (Lave and Wenger 1991) that allowed me to begin the process towards full-membership of the CCGRH community and the academic community of the University. The position offered participation that is partial, time limited and contingent on progress. Participation involves the interrelated activities of constructing, enacting and reviewing the research with my supervisor, and involvement in the CCGRH weekly research seminar series. The practice of being a researcher, or alternatively the research "technologies" (Hill

1991a; O'Malley 1996; Rose 1999), have been attending the centre, undertaking literature searches, reading and reviewing papers and books, engaging in discussions, constructing my own research notes and thesis from these activities, and making presentations to, or listening to presentations by, my colleagues. This participation, which has been alternatively described as "role-taking" (Cusick 2001), provides the time, space and access to the practical, personal and academic resources that have enabled myself as a 'researcher' to be constructed and continue to develop (Williams 1993). The CCGRH provides a community within which my explicit knowledge and knowing has been enacted. In this location, expertise is simultaneously an individual and communal achievement; being a 'researcher' is a co-production activity in which a display of individual competency is required in conjunction with participation and collaboration with people and artefacts.

With the CCGRH as a base to which to return, I have entered the research site of the SWSAHS. The next four parts discuss my participation within the research site. The next part focuses on my engagement and participation with the researchers and the HORT in the Simpson Centre.

3.2 Engaging with the Simpson Centre

The researchers of the Simpson Centre undertake what they describe as applied health services research, that is, research seeking to improve the functioning and effectiveness of services in the SWSAHS. While working across the AHS, physically the Simpson Centre is located in one of the old wards in Liverpool Hospital, and organisationally is part of the Liverpool Health Service. At the time I was undertaking the research the members of the HORT had become based within the Simpson Centre, and there was an ongoing merging of their work activities. This was fortuitous for me as engaging with the HORT and the researchers of the Simpson Centre became essentially one and the same

activity. I engaged with the researchers and the HORT by becoming familiar with the weekly routine of the Simpson Centre and committing myself to spending three to four days per week there, attending during their normal working hours, that is, from 8:30am to 5pm. This period extended from March 2000 through to April 2001.

The four HORT staff and the two Simpson Centre researchers associated with the IBIS and MINET became the “key informants” (Davies 1999) during this period, providing interviews, access to documents, and introductions to significant people associated with the IBIS and MINET. (In fact there are six HORT staff but two have administration duties only.) I strove to build rapport with the researchers and the HORT by seeking to understand a little of their lives and their work history. Conversely, I shared aspects of my own personal and professional history. I explained my academic and work history to the participants, including my positions as a social worker in the health system and my links with the University, thereby allowing the participants to place me within their experience (Hammersley and Atkinson 1995). I used this approach as a strategy to demonstrate that I have an appropriate background to interpret the context, demands and constraints of their work (Hill, Beattie and McDougall 1999).

With the researchers and the HORT credibility rests upon the expansion of role from clinician to clinician-researcher with the emphasis on the researcher aspect. Being a member of the CCGRH at the University provided formal recognition and status as a ‘researcher’, thereby allowing me to participate within the context of the Simpson Centre. My position and participation was similar, yet different to the other research positions in the Centre. My position provided a foundation for membership that was time limited, linked to the time necessary for the research, and bounded in focus in that I was focused on a specific project, not employed in a generic research position. However I was accepted as a colleague, participating in the seminar program, contributing on several internal papers and

one published research paper with the researchers and the HORT; see Phung et al. 2001. As importantly, I also participated in the informal activities of the Centre, that is, taking time to talk over coffee about the weekend or events in the news, and to have lunch together. In these ways I endeavoured to address the issues of reciprocity (Lincoln and Guba 1985; Hammersley 1992; Lipson 1994; Creswell 1998), or exploitation (Hammersley and Atkinson 1995), and relevance of the research (Atkinson and Hammersley 1994; Giacomini and Cook 2000b; Mays and Pope 2000). That is, I engaged in conduct that reciprocated the generosity that was extended to myself and strove to demonstrate the relevance of the research to the HORT and researchers.

While initially hesitant to engage in these activities, I came to understand that the activities I was engaging in was the 'research' and provided the opportunity to observe and discuss what and how the HORT and researchers had come to be doing what they were. In this way, my 'expertise' as a researcher became enacted and embodied through participation in the formal and informal activities of the Centre. This participation was necessary to gain access to, and understand the work of, the researchers and the HORT with regard to the IBIS and MINET. Engaging in such activities has been noted as a necessary requirement to realise research aims (Spradley 1980; de Laine 2000), and labelled as an "active membership role" (Adler and Adler 1994). Similar to participation in the CCGRH community, being a researcher was an activity of co-production with people and artefacts.

Constructing a discourse for the research involved conducting semi-formal and informal interviews with the researchers and the HORT staff, undertaking document analysis examining the reports and presentations associated with the IBIS, and engaging in background reading about the SWSAHS and the Simpson Centre. I also undertook participant-observation of the activities of the researchers and the HORT staff as they continued to develop and expand the use of the IBIS with the early childhood nurses.

In ethnographic terms the researchers and the HORT are also known as the “gatekeepers” or “sponsors” through which further research participants were located (Agar 1980; Lincoln and Guba 1985; Ely, Anzul, Friedman, Garner and Steinmetz 1991; Hammersley and Atkinson 1995; Smith and Deemer 2000). Through these participants I was able to access and conduct interviews with the director of Community Health, a senior nursing project officer, and six nurses that had been involved with the IBIS in Ingleburn. Unfortunately, two other nurses associated with the IBIS declined being interviewed and several others were unable to be located as they had left the AHS.

Locating myself within the Simpson Centre I began to examine the MINET program and the IBIS. The next section details the construction of the research focus.

3.3 Constructing a research focus

The problem was defined by the answer at the same time the answer developed during the problem, and both took form in action in a particular, culturally structured setting. (Lave 1988: 2)

I commenced the research using an iterative process of field exploration and literature review (Mays and Pope 1995a; Greenhalgh and Taylor 1997; Wainwright 1997), with my time divided between literature searches at the University and fieldwork in the AHS. The fieldwork involved discussions with the research staff of the Simpson Centre, staff of the HORT and community health nurses who had been involved in the construction and development of the IBIS and MINET program. In addition, I was able to examine historical documents, reports and presentations, related to both the IBIS and MINET, thereby investigating the recorded actions and dynamics involved in their development. When at the University I participated in the activities of the CCGRH community and began to undertake a broad examination of the academic literature covering

issues such as change models, innovation processes, implementation and knowledge and learning in organisations.

The literature presented as offering a very rational, individualistic empirical approach to change and innovation, using language as representative or truth (Gergen and Thatchenkery 1996). The ethnography however was revealing a situation that was full of difference, contestation, uncertainty, unknowns and unresolved issues with action driving rationality. The participants were describing a situation of open-ended communal meaning construction, involving ongoing negotiation and compromise. The literature was emerging as static while the ethnography was revealing a very dynamic and vivid reality. The contrast could not have been more distinct.

The CCGRH community at University provided a forum in which to explore this difference, construct meaning and a direction that sought to unite the ethnography and the literature. The CCGRH community, in the weekly research seminars, strove to move beyond the controlling rationality of the management discourse that pervades the literature (and increasingly the practice of health services management) and sought to explore, negotiate, and understand the chaotic dynamics that emerge within this highly political environment. The research orientation was to centre the ethnography while seeking literature that enlightened and opened questions further, rather than sanitise and rationalise the ethnography to fit the immediate literature. The ethnography continued to explore the dynamic, conflictual, negotiated process that took shape and name in the IBIS artefact and MINET program.

All in all, the research became a reality in my, and others, embodied experience and enacted practice, utilising a collection of physical resources and constructed artefacts. Over the months, as I cycled through this practice, I constructed knowledge of the issues associated with the IBIS and MINET program. As my knowing grew in complexity and depth, so did my relationships with the members

of the CCGRH community and the research participants in the AHS, and in doing so a focus for the research was simultaneously constructed. In this way this research and thesis is situated knowledge, a part of the product of the activity, context and community in which they are developed and used (Lave 1988; Lave and Wenger 1991; Brown 1998; Madill, Jordan and Shirley 2000; Spencer 2001). Ultimately three factors interwove together in a hybrid process (Bhabha 1990) to shape the direction and focus for the research.

The first factor is my participation within the academic community of the CCGRH. In conjunction with my own history, interests and skills, the CCGRH shaped the direction that was produced (Maylone 1998; de Laine 2000; Mir and Watson 2000). The CCGRH provided a community of practice in and through which I developed my explicit knowledge and tacit knowing. Being part of this Centre shaped my approach to research into health services, including the issues, dynamics and difficulties considered of most importance by this community. Being engaged with the CCGRH, rather than one with a business orientation, has meant that a different emphasis and understanding has influenced the research (Hammersley 1992).

Truth, or meaning, comes into existence in and out of our
engagement with the realities of our world. (Crotty 1998: 8)

The approach of the CCGRH community has become embodied within the research and thesis from participation in this particular context, rather than the “truth” having been discovered (Clifford 1986; Sutton 1993; Hill Bailey 1997; Crotty 1998; Hardy and Leiba-O’Sullivan 1998; Cheek 2000; Smith and Deemer 2000; Manias and Street 2001; Hill Bailey and Tilley 2002; Jorgensen 2002). There was no knowledge or truth awaiting discovery; rather my engagement with the CCGRH community constructed the knowledge of the thesis.

Within the CCGRH, the idea that learning, knowledge and practice are socially constructed is emphasised. This understanding led me to consider the concept of

a “community of practice”. The community of practice theory was congruent with my constructionist approach and made ‘sense’ to me. As Frost (1999) and Weick (1999) explain, the theories that matter most are those theories that have emotional resonance. I found the ideas presented in the socio-cultural practice approach resonated with my own experiences of learning and clinical practice (Schultze 2000). Conversely, I found that Axelrod (2000) had articulated my ambivalence toward the change models I was exploring within the management literature. He has argued the current models of change are based on managers’ desire to control, they are ill conceived and are poorly implemented (Axelrod 2000). In addition to the community of practice theory, I also identified the idea of an immutable mobile from the work of Latour (1986) and the notions of governmentality (Foucault 1979; Rose 1996, 1999) and governance (Rose 1999; Courpasson 2000; Flynn 2002) as important for the research. The inclusion of these ideas offered a way to further describe and explore issues of participation, change, learning and knowledge within a community of practice. Together these ideas provided the theoretical points of departure for the research.

The second factor to shape the research was my emerging awareness, through the fieldwork, of the importance of the IBIS for both the community health nurses and the AHS more broadly. When exploring the construction and refinement of the IBIS, I came to understand that the community health nurses were in fact describing the construction and refinement of their professional practice of early childhood nursing; an action labelled by Iedema (2001, 2003) as “resemiotisation”. Constructing and refining the IBIS has changed the work and practices of the community health nurses significantly, simultaneously expanding the explicit knowledge and tacit knowing required for, and acquired through, practice. The IBIS was increasingly being used as a shorthand way of talking about the specialised practice of early childhood nursing. As I undertook the ethnography, I also came to appreciate the centrality of the IBIS to the MINET program. As explained, the IBIS is a key database that is being used as a model for the construction of other databases within other networked services, as well

as being used to undertake population health research by the researchers in the Simpson Centre. Through this networking the nurses became engaged into extended relationships of accountability.

The third factor to shape the research was the necessity that the research project be manageable within the requirements of producing a thesis for the University, and conducting research within the ongoing socio-political climate of the SWSAHS. While more questions can be generated than can be answered in any research (Hammersley and Atkinson 1995), constructing a manageable research topic from the broad brief initially presented a challenge. This was mainly because I became acutely aware of the ongoing difficulties associated with the implementation of the MINET program from concept to reality. While initiated in 1997, successful progress had occurred in the Macarthur sector only, and in the year 2000, in the other four sectors negotiations for the networking of services, including the implementation of the IBIS, was continuing slowly.

In part, the difficulties were because the MINET program had been subsumed under a program called 'Families First', a NSW State Government initiative that targets 'vulnerable and at-risk' families. The introduction of Families First appeared to be complicating the already demanding undertaking of the MINET program. In this organisational context, potentially gaining access to research sites and significant people appeared to present an ongoing difficulty; a point highlighted by other researchers who note the impact that the research participants have on the outcome of the research (Cohen and Manion 1985; de Laine 2000). In contrast, the community health nurses I had spoken with were welcoming and willing to have me explore their work and the impact of the IBIS.

In this way, the research empirically developed to focus upon how change had, and continued to, occur through the construction, mobilisation and refinement of the IBIS. This focus led to the identification of the CFHNT as a site for the

research. The next part of this section details the expanding of the research location to the CFHNT.

3.4 Expanding the research location – the CFHNT

As has been described the first period of the research involved exploring how the community health nurses, in collaboration with the HORT and the researchers in the Simpson Centre, constructed, mobilised and refined their increasingly codified practice with the IBIS artefact. This exploration involved participation-observation with the researchers of the Simpson Centre and the staff of the HORT, unstructured interviews with early childhood nurses and document analysis. Through this unfolding ethnography there was a shifting focus from the historical development of the IBIS to explore the impact of the IBIS on the work and practices of the early childhood nurses in the present day. The initial plan I conceptualised was to examine the use of the IBIS across three sites, thereby exploring and contrasting its impact and use. One site would be where the IBIS was yet to be implemented, a second where the IBIS had been recently implemented and thirdly, a site where the use of the IBIS had become the norm. The selection of sites in this way has been described as “purposeful selection” (Ritchie 2001). In developing this plan, I consulted with the researchers of the Simpson Centre and the HORT staff gaining their support and assistance to obtain access to the different sites. However, as the research was enacted this plan changed, a common feature, and strength, of qualitative and ethnographic research (Sutton 1993; Chenial 1994; Hammersley and Atkinson 1995; Maylone 1998; Keen and Packwood 1995; Denscombe 1998; Davies 1999).

The CFHNT of the Liverpool sector emerged as the first site for four reasons (Janesick 1994). Firstly, the CFHNT in the Liverpool sector had yet to implement and use the IBIS artefact and so was a logical choice to begin. The size of the team was a further positive. There were twelve members on the team at this

time; ethnographically the team was of a size that would offer a diversity of practice and thereby ensure a rigorous study (Giacomini and Cook 2000a). Also as importantly, while small the team was large enough that I would not become a burden to individual members (Hammersley and Atkinson 1995). Thirdly, the choice of the CFHNT as the site to begin exploring the use of the IBIS came about as a result of interviews with some of the nurses. Several nurses now working on the CFHNT had previously worked at Ingleburn and been intimately involved with the IBIS from the beginning. When I had conducted interviews with them regarding the construction and refinement of the IBIS I had received a very open and positive reception about the research; their favourable disposition to the research encouraged me to return (Hanson 1994; Wainwright 1997). Fourthly, I discovered a personal connection with the CFHNT. I found that I knew one of the nurses and was known to another. My partner had previously worked with these two nurses when working as a social worker in Liverpool Hospital. I believe that this connection, as intangible as it was to two of the nurses, also contributed to the team providing me with an initial opportunity and opening. That is, my experience, similar to Coffey (2000) and de Laine (2000), was that relationships enabled the research.

I found that these four reasons, intellectually and emotionally reinforcing each other, influenced me to initially approach the CFHNT. Significantly two of the nurses previously involved with the IBIS now had senior positions within the community health centre - one was the manager of the Centre and the other the manager of the CFHNT, both roles otherwise known as the Nurse Unit Managers or "NUMs". In ethnographic terms, they were the "gatekeepers" or "sponsors" to the site (Agar 1980; Lincoln and Guba 1985; Ely et al. 1991; Hammersley and Atkinson 1995; Creswell 1998; Denscombe 1998; de Laine 2000; Smith and Deemer 2000). These two senior nurses provided a positive orientation and support when I met with the CFHNT to ask them to allow me to observe their work. With this positive orientation, the majority of the team was willing to participate in the research; importantly this local research site allowed access

(Morse 1994; Smith and Deemer 2000). Indeed, many of the nurses were intrigued and pleased to participate in the research, with a comment from one nurse reflecting the collective feeling, “in all my years of nursing, this is the first time I have been involved in any research involving nurses!”.

As a result I commenced with the CFHNT in May 2001. I initially planned to observe their work for approximately four months, prior to moving to another team sometime around August or September. Prior to commencing my understanding was they would not be implementing and using the IBIS until sometime early in the next year, 2002. However soon after commencing with the CFHNT I was advised they would be implementing the IBIS later this year. They had been directed to use the IBIS sooner than expected, as the AHS had decided to use the IBIS as a mechanism by which to collect information to meet reporting requirements for the Families First program. Consequently, as the CFHNT would now be implementing the IBIS not long after I was scheduled to leave, I began to reconsider my plan of moving to another team. The option to stay with the CFHNT and observe their practice as they implemented the IBIS became a real possibility.

As Buchanan, Boddy and McCalman (1988) have advised, researchers need to be opportunistic in organisational fieldwork or as other research has noted, research involves luck (Fetterman 1989 in Rock 2001; Smith and Deemer 2000). The CCGRH community at the University provided a space to reflect upon the merits of this opportunity. The argument to remain with the CFHNT was as follows.

Firstly, I had an initial understanding of the work and practices of the CFHNT now and staying with the same team offered the opportunity to observe their progress over time. In this way the narrowing of focus, appropriate for an ethnographic study (Agar 1980), would mean I that I could see the depth of a site rather than

breadth of number of sites (Hammersley and Atkinson 1995; de Laine 1997; Giacomini and Cook 2000a).

Secondly, I had become accepted by the CFHNT and been able to establish what I considered a good rapport with the majority of the twelve-team members. In addition, I continued to have the support of the senior nurses of the community health centre (Wainwright 1997). The size of the team was appropriate for an ethnographic study (May 1997; de Laine 1997; Punch 1999); the team was not so large that I saw individual members infrequently and could not establish relationships with them, and conversely the team was not so small that I was with any one person often enough to be a burden. By way of contrast, one of the other early childhood teams had over twenty-five members.

Thirdly, staying with the CFHNT meant that I did not need to go through the process of negotiating access to other early childhood teams in other sectors. I was aware this activity would be a time consuming and potentially difficult process, given the dynamics of the AHS at the time. Smith and Deemer (2000) have discussed at length, the difficulties faced by researchers attempting to gain access to sites. Partly then, this was a pragmatic choice of setting that I was making (Hammersley and Atkinson 1995; Wainwright 1997).

I therefore approached the CFHNT requesting to stay with them. To my relief, and enormous gratitude and benefit, they consented to my continued observation of their work and their use of the IBIS. Staying with the CFHNT was fortuitous because as I came to appreciate the complexity of their work I realised that the transition to use the IBIS in their practice was in fact enacted on the previous changes they had undergone.

History will have played a part in shaping and developing both context and process and will be carried forward in the human consciousness. Therefore, an insight into the historical events that have shaped both context and process will reveal a better

understanding of the current process and practices. (Fernie, Green, Weller and Newcombe 2003: 180)

I came to recognise that the changes that had occurred previously and how they had shaped the team were important, that is, their current practice was embedded in their history (Contu and Willmott 2003). In this way, the focus of the ethnography became the construction and enactment of the practice of the CFHNT, including their use of the IBIS. Consequently, I spent twelve months associated with the CFHNT, engaged in the conduct of participant-observation. I focused on the practices and relationships of the nurses, describing and interpreting the routine activities of the CFHNT including the changes enacted through the implementation and use of the IBIS. To rephrase, the research sought to explore the ongoing technologisation of practice in this particular location and to detail how practice became established and maintained.

In this way, the research unfolded to focus on the CFHNT. The next part of this section discusses my participation with the CFHNT.

3.5 Participation with the CFHNT

Taking up a position of “legitimate peripheral participation” I participated with the CFHNT as a ‘researcher’. The organisational position of a ‘researcher’, connected to the Simpson Centre in SWSAHS and the CCGRH at the University, had legitimised access, enabling me to speak with several of the nurses previously about their work and the IBIS. As described above, I built on this initial connection to construct and enact a legitimate interest in the work and practices of the CFHNT. The trust extended to me was based on official status (de Laine 2000) or alternatively through affiliation (Agar 1980). Based on this engagement, the nurses agreed that I could join their team in a role of non-participant-observer, which enabled me to pursue my aim, to observe change and innovation, or using the discourse that I have constructed, to detail the

technologisation of practice. In this role I would spend my days with the nurses, attending their formal meetings and informal gatherings, making notes about my observations and discussions with them, and also examining their organisational resources.

The fieldwork with the CFHNT consisted of three observation periods over a twelve-month interval. Dawson (1997) notes that this type of design is becoming more common given the practical constraints researchers face. The first observation period was for a total of 43 days from May through to August 2001. This first period was an opportunity to observe the work and practices of the participants prior to the use of the IBIS artefact. The second period was for 41 days, extending from September 2001 to February 2002, incorporating the Christmas break. The second period was similar to the first with the CFHNT preparing to implement the use of the IBIS artefact. The final and third period following the introduction of the IBIS was for 33 days, extending from February to May 2002.

A benefit of conducting the study over this extended time was that this allowed the participants to become accustomed to my presence (Mays and Pope 1995b). The further reason for the fieldwork observations to be over such an extended period was that this included periods of time away from the field, an issue other researchers argue is as important as being there in the field setting (Davis 1986; Greenhalgh and Taylor 1997; Giacomini and Cook 2000a; de Laine 2000). The time away from the field was structured around the work routine of the CFHNT, and was used productively - for reflection and further literature exploration. For example, over the 2002 Christmas period for about eight weeks I did not participate with the CFHNT due to a significant number of staff having holidays, the closing of clinics in schools (for occupational health and safety reasons), and the subsequent restructuring of services. The practical requirements of University and personal responsibilities also shaped the fieldwork, an issue noted by Smith and Deemer (2000) as significant but often not acknowledged. On Fridays I

attended the seminar program of the CCGRH at University and so was unable to attend with the CFHNT. Also during the research period my father-in-law became terminally ill with cancer, and I needed to adjust my fieldwork to take him to numerous medical appointments. These practical factors necessitated an extended time period with the CFHNT (Dawson 1997).

I planned the weekly and daily activities to provide a regular routine for both the nurses and myself. I committed myself to spending up to four days a week - Monday to Thursday - with the CFHNT, and as indicated on Fridays I attended the research seminars at the University. As before at the Simpson Centre, what I did with the nurses was to treat my participation with them as a job. I fitted into their work routine, keeping the same hours that they did, formally 8:30am - 5pm each day, but regularly staying beyond this time to informally discuss events of the day. When I first joined the CFHNT one of the nurses mapped out a schedule for me that allocated me with a different nurse each day. This I found immensely useful as I then I only needed to confirm with the relevant nurse my day with her. I perceived that this was also beneficial for the nurses as they knew when to expect me and when I was allocated elsewhere. This strategy ensured that I was able to observe different sites with the same people and the same sites with different people; that is, I observed the each nurse in both clinic and home visit contexts. In short, I was exposed to the variety and breadth of the practice of the CFHNT (Johnson 1997a; Giacomini and Cook 2000a). This successful scheduling strategy was repeated for the second and third observation periods with the CFHNT.

During my time with the nursing team an informal and unanticipated role emerged, that of acting as a social worker. This was a role I occupied as observer-participant. In being able to advise and affirm the counselling and child protection aspects of the nurses' work, I was able to contribute to the work of the nursing team. That is, this conduct was one way I could reciprocate to the CFHNT (Lincoln and Guba 1985; Hammersley 1992; Lipson 1994; Creswell

1998). This role also contributed to my gaining the respect and trust of the nurses and was due to my clinical background, current clinical work and hence capacity to converse clinically and prioritise with the nurses on their terms. While an informal activity, this was a melding of two professional roles that assisted with the process of the research (Amit 2000). With this participation I occupied both a “peripheral membership” and an “active membership” role with the nurses (Adler and Adler 1994). This form of participation was a “trade-off” process by which I could move from an outsider to an insider with the team (Loftland and Loftland 1995; de Laine 2000). This participation allowed me to engage with the team on their terms, facilitating the development of relationships with the nurses and the process of the research.

Within the nursing team, participation was also constructed upon personal relationships and self-disclosure. When I joined the team this expectation was extended to me, a situation not uncommon in fieldwork (Spradley 1980; Dawson 1997; de Laine 2000; Schultze 2000; Finlay 2002). Participation with the nurses involved talking about my self, my personal non-work life, interests and activities; and as importantly, participation also involved asking and listening to others similarly. Participation was built on relating to the nurses, not just in their professional role, but as people with lives, interests, dreams, aspirations and emotions; engaging with others in this way has been described as undertaking “moral fieldwork” (Lieberman 1999).

Participation in these ways allowed the nurses to place me within their experience (Hammersley and Atkinson 1995) and enabled me to demonstrate that I have an appropriate background to interpret the context, demands and constraints of their work (Hill, Beattie and McDougall 1999). Initially my acceptance was in part assisted by the unexpected personal connection through my partner (as noted, some years previously she had worked with two of the nurses). Their good relationship and trust of her was extended to me, and provided an initial acceptance into their world. I then was able to capitalise on

this by establishing my own relationships with them and the other nurses, enabling my acceptance into their practice community.

In the location of the CFHNT, these forms of participation interwove to construct the practice of being a 'researcher'. Expertise is realised by drawing upon the authority bestowed by organisational membership, enacting a melding of two professional roles, the clinician-researcher, and establishing personal relationships. Once again, the researcher role is co-produced through engagement with people, their artefacts and practice.

When I commenced with the CFHNT I was aware that the nurses were initially conscious of my presence and several of them took some time to fully understand the focus of the research. On several occasions different nurses inquired whether I was researching their clinical practice, an issue that Baillie (1995) also had to contend with when undertaking ethnography with nurses. For some time I had to continually differentiate that I was not observing their clinical practice but rather investigating how they as a community had negotiated, organised and technologised their practice. The distinction was one that several nurses took some time to grasp, I think for two reasons. Firstly, when the nurses normally had someone accompany them in their work, whether a new nurse or student nurse, the focus was on the clinical practice, so this is what they expected with me. Secondly, they were unfamiliar with organisational and practice focused research, so to consider that someone would seek to investigate how a community of professionals practised, as I was endeavouring to, was an entirely new idea.

Early on during the fieldwork I was aware that some nurses were observing me observe them, with several nurses directly commenting on my note taking. In view of this, a strategy I adopted was to show and discuss the notes I was making with the nurses, engaging with them in what Schon (1983) has labelled "reflection-in-action". This was an activity that had two outcomes. Firstly, the

action demystified and normalised my presence and writing. By showing and discussing my notes and thoughts with the nurses I demonstrated that the focus of the research was on the technologisation of practice and not clinical issues. The second benefit was an unexpected one that the nurses informed me about. The reflection-in-action encouraged the nurses to actively consider how they had come to practise as they were, how they learnt in their practice and the significance of their team, or community, in this process. In the words of a nurse,

“...and I’ve enjoyed having you here because you’ve really made me think why I do things, by asking when we’d do the home visits and we’d get back in the car, and I’d think here we go, but because you’d ask I had to think then. So it made that better too, more of a thought process, instead of an automatic reaction why am I doing it, and I think that that can do nothing but improve practice.”

Kerry ECN, Interview 14/11/01

Thinking and reflecting in this way was not conduct that the nurses indicated that they had actively engaged in. My presence was cause for the participants to stop and examine their conduct, an outcome that has been noted by other research (Whyte 1955).

The initial hesitancy of the CFHNT began to dissipate as I began to establish rapport with the nurses, and engaged in reflection-in-action with them. As evidence of acceptance by the nursing team, I witnessed a variety of conduct, from disagreements and conflicts through to laughter and celebration. This is not to say that I became fully accepted by the nursing team; this was not the case. As evidence of my marginal position, I am aware that there was a personality conflict between two of the nurses that impacted upon the team. I noted that the nurses were careful to not discuss this dispute with me, as the NUM attempted to manage and resolve the issues for the particular nurses and the wider team.

During my time with the CFHNT I continually checked with the nurses what they thought and felt about my presence when they engaged in their clinical work. As noted, they indicated that they were initially hesitant to have me accompany them. This was due to not being exactly sure about the focus of the research and what sort of questions I would be asking them. They were not concerned about having a person with them during their clinical work. While being accompanied was not a daily occurrence for them, they explained that they do have students and other nurses accompany them on a fairly regular basis. Even though I may have been asking different questions about their practice than they were perhaps used to, they have had the experience of describing and explaining their clinical practice to others. As I became known to the nurses, several of them indicated that they looked forward to my time with them as this meant that they had company for the day.

When accompanying the nurses they would introduce me to the parents they worked with, a large majority of whom expressed interest in the research and spoke in very positive terms about the nurses and the early childhood service. Of all the families visited, or those that attended the clinics, there were five occasions - four home visits and one clinic visit - where my presence obviously impacted upon the situation. On one clinic visit, the mother initially presented as calm but then began to cry. On this occasion I was very aware my presence affected the interaction with the mother, who by turning her back on me and speaking very softly, demonstrated that she was uncomfortable with my being in the room. The nurse later that day recontacted this mother offering her an additional visit.

The other occasions where my presence explicitly affected the clinical situation involved four home visits, none of which I attended. When the nurses were booking their home visits they would explain to the mother that they would be accompanied for the visit, explaining my non-clinical role, and this provided the mother with the opportunity to decline my presence if she wished. On two

occasions the nurse, using her knowledge of the family, requested I did not attend and we rearranged our day together accordingly. On one other occasion, a mother declined my presence prior to attending. The fourth incident was when the family declined my presence only after we arrived, and so I waited in the car for the nurse. In contrast, there were some occasions when the nurse anticipated a potential problem only to find the families very positive about the research and prepared to welcome me in without hesitation. This positive and relaxed approach from these families then flowed through to a relaxed atmosphere for the clinical visit.

This final part of this section has discussed my participation with the CFHNT, examining my engagement and impact upon the CFHNT. Overall this section has explored the unfolding of the research, noting the context of the CCGRH and then discussing my participation with the Simpson Centre and the CFHNT, the two local sites of the research within the AHS. The final section now discusses the enactment of my research expertise, within the CCGRH and across the research locations in the AHS.

4. Enacting research expertise

My growing expertise and identity as a 'researcher' is an ongoing enacted process and outcome realised through participation with others within the CCGRH community and across the field locations of the research as described above. Based on the explanation above my research expertise can be understood as a four-fold process.

Firstly, enacting expertise involves embodying authority and legitimacy. That is, surveying and disciplining myself to present myself in written, verbal and physical dimensions that merit selection to join the CCGRH at the University. Then having been selected to join the CCGRH community, the ongoing enactment and

refinement of these dimensions remains necessary. This involves demonstrating the self-managing capacity to enact the specific technologies as appropriate in this location, including participating with others at the centre in the self and communal surveillance and disciplining process labelled 'research seminars'. That is, I had to be willing and able to engage in the activities of governmentality (Foucault 1979; Rose 1996, 1999) and self-governance (Rose 1999; Courpasson 2000; Flynn 2002) within the context of the centre.

Secondly, expertise then involves translating the research authority and legitimacy of the CCGRH into other locations, including the field locations, seminars and conferences. The conduct involved is to draw upon the explicit and embodied authority of being a researcher, using this authority to negotiate access and then utilising the embodied technologies to demonstrate ongoing competency within a range of different contexts.

Thirdly, expertise involves constructing information and knowledge (artefacts and experiences) from the field locations for transportation back into the academic context, the CCGRH community. This has been primarily through the use of myself and my writing as the instrument to make visible and knowable the research (Schultze 2000). That is, through engaging in "participative observation" (Savage 2000) to transform my discursive and sensual experiences into knowledge, where the use of relationships and emotions is necessary to influence the quality of the work (Thompson, Warhurst and Callaghan 2001).

Fourthly, expertise is about reconstituting, or disciplining, the information and knowledge into standardised formats. This involves the activity of surveying and disciplining myself to comply with the norms of conceptualising, writing and speaking within the university context. The most significant outcome of this learning process is the construction of an immutable mobile (Latour 1986), that is, a thesis.

My 'expertise' as a researcher has been realised through engaging in this four-fold process that has made me visible, knowledgeable, accountable and disciplined.

5. Conclusion

In this chapter I have striven to present an account of myself as the researcher and the unfolding of the research so to articulate how my expertise has been realised. Being a researcher has involved participating within the CCGRH community and learning to engage appropriately within the two field locations of the Simpson Centre and the CFHNT. My expertise as a researcher has been co-produced through participating in all three of these locations. This has required a continuous movement within and across all locations, enacting different forms of membership as appropriate for each setting.

This process of being a researcher, becoming an expert, doing research and writing this thesis has been as much a personal emotional journey as an academic one (Agar 1980; Hammersley and Atkinson 1995; Coffey 2000; Cusick 2001; Manias and Street 2001). As Tedlock (2000) and Ely, Vinz, Dowling and Anzul (1997) have commented, the process is the product, an outcome for me as important as the construction of the thesis. Indeed, in my experience the two are inseparable (Lincoln and Guba 1985). The unfolding of this research is a process that parallels the technologisation of practice undertaken by the nurses. That is, both involve the construction of relationships, practices and artefacts through the assembling and appropriation of ideas and conduct appropriate for each particular situation.

The next chapter details the methodology of the research.

Chapter Three: Methodological approach to the research

...the formulation of precise problems, hypothesis and an appropriate research strategy is an emergent feature of ethnography. (Hammersley and Atkinson 1995: 191)

Ethnography is a way of collecting, and analysing the ways in which human beings categorise the meaning of their world. In other words, ethnography attempts to learn what knowledge people use to interpret experience and mould their behaviour within the context of their culturally constituted environment. (Aamodt 1991: 41)

1. Introduction

This chapter outlines the ethnographic approach utilised to explore the technologisation of practice. This is the third chapter of the thesis, and follows the first chapter introducing the research and the second chapter, which as a reflexive undertaking and part of the ethnographic audit trail, presented an account of myself as the researcher, and the unfolding of the research. In this chapter, the argument will be made that an ethnographic approach is appropriate as the setting and problem are closely related (Hammersley and Atkinson 1995). This point has been demonstrated in the previous chapter and will be further born out in the empirical chapters that follow, where they present, firstly, the historical examination of IBIS, or alternatively early childhood nursing, and then the current day exploration of the practice of early childhood nursing by the CFHNT. This approach has enabled a detailed description and interpretation of the technologisation of practice to be constructed within the setting of the research, a goal of a qualitative approach (Janesick 1994; Keen and Packwood 1995; Leininger 1997; Creswell 1998; Braa and Vidgen 1999; Morse 1999; Sofaer 1999).

This chapter outlines the methodology utilised, and the structure for the chapter is as follows. The next section outlines the ethnographic approach of the research. The third section discusses the data collection and analysis process. The fourth section details the actions taken to ensure the rigour of the research, and the fifth section considers the limitations of the research. The sixth, and last section, discusses ethical issues.

2. The ethnographic approach

This section details the ethnographic approach of the research. The section begins by reviewing the genealogy of ethnography and then considering the issues of representation and legitimisation. Finally, the socio-logical approach to ethnography utilised within this research is discussed.

2.1 The genealogy of ethnography

There is no simple and uncontroversial beginning to ethnography (Atkinson and Hammersley 1994), with different authors offering contesting accounts; for example, Tedlock's (2000) account as opposed to that provided by Vidich and Lyman (2000). However, within the literature there appears to be a consensus regarding the use of ethnography in anthropology and sociology. That is, within the discipline of cultural anthropology ethnography had historically focused on small-scale non-western societies. Then, in the early twentieth century, within the discipline of sociology, ethnography was utilised to focus upon the issues of social adjustment within western society (Hammersley 1992; Boyle 1994; Atkinson and Hammersley 1994; Creswell 1998; Sofaer 1999; Denzin and Lincoln 2000; Tedlock 2000; Vidich and Lyman 2000). The consensus extends with acceptance of the "five movements", as described by Denzin and Lincoln (1994, 2000) in their review of the development of qualitative research traditions. The five movements are understood as follows.

The first movement is defined as the “traditional period”, also called “an objectivist and positivist program”, and focused upon colonising research accounts as represented by Malinowski (1922). This period was from 1900 to the Second World War.

The second, or “modernist”, movement was from the post-war to the 1970s with attempts at “rigorous qualitative studies of important social processes” (Denzin and Lincoln 2000: 14). In this postpositivist period Becker, Blanche, Hughes and Strauss’s (1961) book, *Boys in White*, is the characterising work, and the text by Glaser and Strauss (1967), *The Discovery of Grounded Theory*, offered a new rigour to qualitative research.

This modernist period gave way to a third movement, called “blurred genres”, which covers the period from 1970 to 1986. This movement saw a multiplicity of paradigms and strategies. Geertz’s works, *The Interpretation of Culture* (1973) and *Local Knowledge* (1983), which highlight the author’s presence in the interpretive text, exemplify this period.

In the mid 1980s the fourth movement, the “crisis of representation” took place. This crisis is one in which the ethnographic product and the moral and intellectual authority of the writer is seriously questioned. At this time research became more reflexive with issues of race, gender and class under active consideration. In this period several important works were produced including Marcus and Fisher (1986) *Anthropology as Cultural Critique*, Clifford and Marcus (1986) *Writing Culture* and Van Maanen (1988) *Tales of the Field*.

The questioning by researchers continued into a new period, simply called the “fifth movement”, which concerns a triple crisis of representation involving representation, legitimation and praxis. That is, firstly the recognition that researchers cannot directly capture lived experience, but rather the writing of the text constructs the experience. Secondly, the problematic question of how to

evaluate and interpret such texts, and finally, the question of the purpose of research became fore-grounded. An outcome of this questioning has been a period of experimental ethnographic writing, including poetry and plays (Atkinson and Hammersley 1994; Tedlock 2000; Travers 2001); however there have been critiques of such work, with questions raised about their academic and practical value (Gans 1999).

There is a debate as to whether the sixth, “postexperimental”, and seventh, “the future”, movements are occurring as Denzin and Lincoln (2000) have recently claimed (Coffey 2000). Nevertheless, there is the accepted view that contemporary ethnography, shaped by the five movements outlined, is characterised by a multiplicity of perspectives and practices (Wolcott 1990; Boyle 1994; Comaroff and Comaroff 1994; de Laine 1997; Hill Bailey 1997; Creswell 1998).

Across the spectrum of the social sciences, the use and justification of ethnography is marked by diversity rather than consensus. (Atkinson and Hammersley 1994: 257)

In the recent period many researchers, in many diverse fields, have embraced ethnography. For example, ethnography has been utilised to investigate such diverse areas as health care research (Boyle 1994; Mays and Pope 1995a; Morse and Field 1995; Berkwits and Inui 1998; Davies 1999; Sofaer 1999; Savage 2000), nursing (Mays and Pope 1995a, 1995b; Cheek 2000), education (Fetterman 1989; Wolcott 1994), and organisation studies (Schwartzman 1993; Orr 1996; Wenger 1998a; Tedlock 2000; Bloor 2001), including organisational innovation and change (Dawson 1997; O'Connor 2000), team working (Sheard and Kakabadse 2000) and knowledge work (Schultze 2000; Bechky 2003). Indeed, I myself am reflective of this ongoing period of diversity, in that I am a social worker undertaking an ethnographic study regarding change within a health service organisation.

The crisis of ethnography and the diversity of practice necessitates that researchers address the issues of representation and legitimation, and in doing so be explicit about their approach to ethnography (Creswell 1998). The issues of representation and legitimisation will now be discussed, (recalling that the issue of praxis, or the reasons for the research, has been addressed in the initial chapter) and this will lead into detailing the ethnographic approach adopted for this research.

2.2 Representation and legitimisation

In the initial chapters I have acknowledged that I hold pre-existing interests, and that these interests have influenced and shaped the investigation (Boyle 1994; Chia 1996; Alvesson and Skoldberg 2000; Spencer 2001). In doing so, I have sought to locate my research position within the university context and in relation to the field where the research has been conducted. Recall also that I have acknowledged how my response to the literature influenced the theories I have drawn upon and those I have not. To restate, the community of practice theory made 'sense' (Frost 1999; Weick 1999) to me, while conversely I found that Axlerod (2000) had articulated my ambivalence toward the change models in the management literature. In this way, I have influenced and shaped the research to pursue topics of interest to me, as much as identifying a line of inquiry relevant for a university thesis within the CCGRH research community. What this means is that I, as the ethnographer, am as much a part of what is being studied as the researchers, HORT and nurses from the field settings (Gergen and Gergen 1991; May 1997; Wainwright 1997; Altheide and Johnson 1998; Davies 1999; Bloor 2001; Macdonald 2001; Spencer 2001). Indeed, chapter two was presented as a reflexive analysis of how both I, as a researcher, and the text have been constructed and enacted through the ethnographic research process.

I understand that developing the research focus, choosing the data, writing memos and constructing this text, is the act of constructing the ethnographic experience for the participants and myself. I have not sought to capture lived experience through this conduct (Clifford and Marcus 1986; Van Maanen 1988; Hammersley and Atkinson 1995; Denzin 1997; Denzin and Lincoln 2000), but rather present the text as a discursive representation (Clifford 1986; Crapanzano 1986; Comaroff and Comaroff 1994). I understand that all accounts are constructions - that there are many 'truths' experienced in the research process, and this text is the account that I have made (Clifford 1986; Clifford and Marcus 1986; Van Maanen 1988; Denscombe 1998; Atkinson 1997; Davies 1999; Cheek 2000; Vidich and Lyman 2000; Rock 2001). While I present other voices in the text, using the words they used, the research voice is mine. In this way I have selected, edited and represented the participants' narratives, a process Clifford (1986) has labelled "transcription", and one that, for all that is included, leaves much behind in the process (Pratt 1986). As a result the text speaks about others, not for them (Comaroff and Comaroff 1994).

The rhetorical structure of the text is as a "realist tale" (Creswell 1998), that is, in a direct and matter-of-fact presentation with a chronological approach used as a linear arrangement for the text (Boyle 1994; Wolcott 1994; Wainwright 1997). The intention in adopting this presentation is to produce verisimilitude and the feeling that others could experience the events described (Creswell 1998). This structure highlights the partnership constructed by the text with the reader, whereby the work of reading involves the reader using tacit knowledge (Polanyi 1958, 1967) for ongoing interpretation and contextualisation (Sutton 1993; Atkinson 1997; Denzin 1997). As a result the text can be regarded as "fiction" (Geertz 1973) that draws upon the conventions of reading and writing (Atkinson and Hammersley 1994).

The ethnographic approach utilised is in line with the practice of Creswell (1998), who in turn has drawn upon the socio-logical approach of Hammersley and

Atkinson (1995), and the educational anthropology of Fetterman (1989) and Wolcott (1994). Creswell (1998: 15) notes this approach as follows:

The researcher builds a complex, holistic picture, analyses words, reports detailed views of informants, and conducts the study in a natural setting.

This approach involves looking at what people do, what they say and the artefacts they use in their daily activities, and then constructing a rich description (Geertz 1973; Denzin and Lincoln 1994); such an approach has also been described as “interpretative ethnography” (Geertz 1973; Agar 1980; Van Maanen 1988; Wolcott 1994; Hammersley and Atkinson 1995; Denzin 1997).

As the research focuses on the actions, interactions, language and artefacts of a defined and bounded group within their context, an ethnographic methodology is highly appropriate (Spradley 1980; Aamodt 1991; Boyle 1994; Minichiello, Aroni, Timewell and Alexander 1995; Creswell 1998; Backman and Kyngas 1999). Ethnography allows the exploration of practices as they are produced and reproduced (Morse 1994), leading to a complex and detailed description of the phenomenon (Spradley 1979; Lincoln and Guba 1985; Hammersley 1992; Janesick 1994; Hammersley and Atkinson 1995; Keen and Packwood 1995; Leininger 1997; Creswell 1998; Crotty 1998; Davies 1999; Langley 1999; Morse 1999; Sofaer 1999). This means ethnography is both a process by which to conduct research and an outcome, which in this case is a text, in the format of a thesis, of the research (Agar 1980; Boyle 1994; Atkinson 1997; de Laine 1997).

As description and interpretation have been the central focus, the research is orientated toward a qualitative design (Rabinow 1977; Pollitt, Harrison, Hunter and Marnoch 1990; Ely et al. 1991; Hammersley 1992; Sutton 1993; Schwandt 1994; Janesick 1994; Pope and Mays 1995; Dobuzinskis 1997; Wainwright 1997; Berkwits and Inui 1998; Sofaer 1999; Hill Bailey and Tilley 2002). A qualitative design has enabled the research to be flexibly adapted to the unfolding of the

research situation and to match the values and skills of the researcher (Finch 1986 in Hammersley 1992; Sutton 1993; Chenail 1994; Suchman 1995; Maylone 1998). In this way, an ethnographic approach provides a means to explore a complex and chaotic real-life situation (Baum 1995; Keen and Packwood 1995; Pope and Mays 1995; Berkwits and Inui 1998; Hurley 1999; Morse 1999). In doing so, an ethnographic approach has enabled the research to locate the phenomena within the historical context of the health organisation and the broader profession to which the community health nurses belong.

Ethnographic research has been categorised by a number of writers. Boyle (1994) described research focusing upon small groups as “focused ethnography”, a term she has borrowed from Morse (1991) in the nursing literature. When the group has fewer than fifteen members the term “microethnography” (Werner and Schoepfle 1987) or, alternatively, a “mini ethnography” (Leininer 1985) have also been used. Similarly, the term “particularistic ethnography” (Werner and Schoepfle 1987) has been used to define an ethnographic approach applied to a particular small group or social unit.

Particularistic ethnographies focused on a social unit or processes within a small group and generally identified and helped us understand the cultural rules, norms, and values and how they are related to health and illness behaviour. (Boyle 1994: 172)

In addition, to explore the social processes of a group but not necessarily health and illness behaviours, the category “processual ethnographies” is used.

They (processual ethnographies) are holistic, contextual, and reflexive in nature. They usually include both emic and etic data and the focus is on a group of people who share similar social and cultural characteristics. (Boyle 1994: 170)

From the diversity of terms identified, this research can be best described as a focused ethnography that is utilising a socio-logical approach. That is, as the research is examining what a group of people do, what they say and the artefacts they use in their daily activities and constructing a rich description, the research can be described as utilising a socio-logical approach (Hammersley and Atkinson 1995; Creswell 1998). Further still, as the research unfolded to focus upon the CFHNT, a small team made up of only 13 members, the research can be described as a “focused ethnography” (Morse 1991; Boyle 1994).

In conducting the research I employed a semi-structured, open and direct approach (Sarantakos 1995). I describe the approach as semi-structured as I utilised, but did not remain limited or restricted by, the initial theoretical starting points. As the participants knew the purpose of the research, the study was open and there was no deception on my part (Agar 1980; Creswell 1998). This issue has been labelled “impression management” (Hammersley and Atkinson 1991), or alternatively “front-end management” (Wainwright 1997). Consequently, and as discussed in chapter two, I participated in a style that blended in with the research sites. I dressed and acted in a manner appropriate for the field context, adopting a professional appearance that would not draw attention to myself. I interacted with the participants during the normal social periods of the day, morning tea, lunch and so on, using these opportunities to reveal aspects of my history and personality, in an endeavour to build up sociability and trust. This conduct is the process of building up “mutuality” between the participants and myself to enhance the success of the research (Hammersley and Atkinson 1995). Finally, the approach was direct as the participants and their practises were the subject under exploration.

With this semi-structured, open and direct approach the research action cycled between fieldwork, reflection and literature examination in a dialectical process (Eisenhart 1989; Mays and Pope 1995b; Greenhalgh and Taylor 1997; Chenail 1997; Wainwright 1997; Creswell 1998). The strength of this approach is the

sensitivity to the issues and variability of the subject, however the counterpoint is the potential to become overwhelmed by the complexity of the subject (Backman and Kyngas 1999). This highlights the importance of being able to focus the research over time (Agar 1980; Hammersley and Atkinson 1991; Chenail 1997). What I have striven to do is organise the information about the participants in a comprehensible and meaningful way (Atkinson 1997) by integrating "experience-near" and "experience-distant" concepts (Geertz 1983).

An experience-near concept is, roughly, one which someone - a patient, a subject, in our case an informant - might himself naturally and effortlessly use to define what he or his fellows see, feel, think, imagine and so on, and which he would readily understand when similarly applied by others. An experience-distant concept is one which specialists of one sort or another - an analyst, an experimenter, an ethnographer - employ to forward their scientific, philosophical, or practical aims. (Geertz 1983: 57)

In this case, I am using the "experience-distant" concepts of a community of practice, immutable mobiles, governmentality and governance with the "experience-near" data from the participants to construct the discourse of the technologisation of practice. Patterns, issues and themes are identified, examined, developed (Pope, Ziebland and Mays 2000) and considered in relation to theoretical concepts. This has been referred to as the characteristic funnel structure of ethnographic research (Hammersley and Atkinson 1991). The outcome is a constructed text that is a synthesis of experience and theory (Denzin 1989; Vidich and Lyman 2000), which "attributes" (Goodenough 1976) a theory of collective behaviour to members of a particular group. While complex and demanding, this methodology has provided the flexibility necessary to respond to the unfolding context of the research, informed by the considerations of myself as the researcher. This flexibility has thereby allowed the questions and subsequent interpretation to emerge through the research process with the broad inquiry narrowing over time (Keen and Packwood 1995; Davies 1999).

A further reason that supported the use of ethnography is that the approach was congruent with the community of practice theory being used within the research. Central to the community of practice approach is the view that the work and practices of the members are built upon the process of the negotiation of meaning (Wenger 1998a). As detailed in chapter four, this theory argues that together the members construct a shared understanding and common practices that unite and identify them. Ethnographic research is concerned with describing and interpreting the meanings that people attribute to their existence and to their world (Hill, Beattie and McDougall 1999). Hence, an ethnographic approach, in seeking meaning, is congruent with the community of practice theory and provides methods and processes that enables the work, practices and experiences of the members to be explored within their context (Mowday and Sutton 1993; Anderson and Sharrock 1993; Gherardi 2001). Such research has been labelled “practice-orientated research” (Lave and Wenger 1991; Wenger 1998a; Schultze 2000).

As evidenced by this ongoing discussion, here and in the previous chapter, I have attempted to address the issue of reflexivity in the research process. In chapter two I have identified the university context, explored the construction of the research focus and my participation within the field settings. In doing so I have endeavoured to consider my influence upon the research process and to discuss how my expertise has been constructed through the enactment of the research. In addition to this discussion, there is one other point worth making explicit in this regard, that is, that the research has been conducted in the city where I live. Commonly, when speaking of ethnography, the term “participant observation” is used not to indicate a particular method as such, but to indicate a way of being in the world with the group under study (Atkinson and Hammersley 1994). Considering participation observation in this way for the moment, a defining characteristic of my research is that the fieldwork has been conducted in the city-society where I live, a legitimate and appropriate task using ethnography (Davies 1999). In this way the form of participant observation practiced was

similar to that of the Chicago school of the 1920s and 1930s (Whyte 1955). That is, I have not undertaken a physical journey into a strange and exotic location to dwell among some 'primitive group' and then some time later to return to my country. Rather, I have remained within my own city and I have not been isolated in the fieldwork as a researcher studying in the tradition of Malinowski would have been (Davies 1999). My practice of participant observation is characterised by the fact that I have continued to live with my partner, maintained my friendships and conducted my life around the requirements of the research, including regular contact with colleagues at university. This latter element in particular is an important action by which to continually construct and maintain perspective on the research. Attending the university on a weekly basis, and this attendance being known to the participants from the outset, has provided a practical and reinforcing activity that continually realigned and highlighted my transient role into and out of the research setting.

This section has discussed the genealogy of ethnography, the issues of representation and legitimisation, and the ethnographic approach of the research, identified as socio-logical or interpretative. The issue of reflexivity has been addressed primarily in the previous chapter, with the point made explicit here that the research has been conducted in the city where I live. The section that now follows examines the methods of data collection and analysis used in the research.

3. Data collection and analysis

This third section details the methods of data collection and analysis used in the research. The section is comprised of two parts. Firstly, the four data collection methods are discussed, and then the methods of data analysis are detailed.

3.1 Methods of data collection

Ethnographic research gathers unstructured data that is collected by a variety of methods and written up as fieldnotes (Lofland and Lofland 1995; Hammersley and Atkinson 1995; Dawson 1997; Davies 1999). The four methods I have utilised are participant observation, interviews, document analysis and respondent validation. The first three of these are noted as the most common methods in qualitative research (Giacomini and Cook 2000a). Conducting the fieldwork using these methods, participants were observed and conversed with engaged in the totality of their responsibilities in a range of settings (Agar 1980; Hammersley and Atkinson 1991; Ely et al.1991). The data collection methods are complementary, in particular with participant observation and unstructured interviewing producing data that is understood to illuminate each other (Fontana and Frey 1994; Hammersley and Atkinson 1995; Dawson 1997). As indicated earlier, commonly when speaking of ethnography the term participant observation is used not to indicate a particular method but to indicate a way of being in the world (Atkinson and Hammersley 1994). When referred to in this way participant observation can include other methods such as interviews. Participant observation also refers to a single method by which to collect data. Not surprisingly, this dual meaning can give rise to confusion. When speaking of participant observation within this section I am referring to the individual method by which to collect data.

The four methods, participant observation, interviews, document analysis and respondent validation, are now discussed.

3.1.1 Participant observation

A researcher when undertaking fieldwork is faced with overwhelming possibilities of information. There is an assault on the senses comprised of sounds, actions,

settings and emotions. Particularly when with the CFHNT this was an issue whereas the Simpson Centre, by nature of the work engaged in, tended to be a calmer and quieter setting. That is, the Simpson Centre involved one location, the office, while the CFHNT involved the community health centre, a number of clinics and the homes of many families. To assist in not becoming overwhelmed, I adopted as an initial guide the fieldnote recording model presented by Spradley (1980) to structure my observations. This model has the following nine categories to consider when observing field situations (Spradley 1980: 78):

Space: the physical place or places.

Actor: the people involved.

Activity: a set of related acts people do.

Object: the physical things that are present.

Act: single actions that people do.

Event: a set of related activities that people carry out.

Time: the sequencing that takes place over time.

Goal: the things people are trying to accomplish.

Feeling: the emotions expressed.

The strength of this model is having categories by which to observe and think, and further this model assisted in the process of engaging with the participants. That is, prior to spending time with any of the research participants I explained the note taking to them using the example of 'clinical notes'. As the participants have all worked, and indeed the nurses continue to work as clinicians, they understood and accepted the necessity of note taking. I discussed this model with the participants and this assisted in clarifying what I was observing and made practical the research for them.

For me the experience of note taking was relatively straightforward, as the practice is a skill used when working as a social worker in child protection. A critical skill in such work is to observe and record interviews and interactions with individuals and families, often under considerable stress. I was able utilise this skill, recording the interactions and my observations with relative ease. The

fieldnotes were for the vast majority written when in the setting, whether that was in meetings, discussions, during clinics or home visits. On the occasions when I considered note taking could hinder an interaction or discussion, I translated my memory to paper as soon as possible after the event. The translation occurred in some instances immediately afterwards, for example in the car or office, while on other occasions I wrote the fieldnotes up that evening.

The participants were observed in the totality of their work. This included activities such as research meetings, briefing sessions, providing clinical services, in consultation with their colleagues, at team, professional and area meetings, writing clinical notes, reading files in preparation for their clinics or home visits, and at lunch, morning tea and coffee breaks.

The notes were taken in an open visible manner with no attempt made to hide or disguise the activity (Sarantakos 1995; Hammersley and Atkinson 1995). The participants were shown the notes relevant to them and this then opened issues of practice up for further discussion. When the observations occurred in the clinic or somebody's home, I or the nurse would explain that I was making notes of the nurse's practice and these did not focus upon or identify them as the family. The vast majority of families showed no interest in the notes, however on three occasions to reassure the particular mother involved I showed her the notes and we discussed the aim of the research; such conduct has also found to be necessary by other researchers (Davis 1986).

3.1.2 Interviews

During the course of the fieldwork I conducted three different forms of interviews – “informal” (Fontana and Frey 1994) or “natural” interviews (Davies 1999), “unstructured” interviews (Fontana and Frey 1994), and “ethnographic” (Davies

1999) or “reflexive” interviews (Hammersley and Atkinson 1995). Each will be discussed.

Firstly, the fieldwork has involved “informal” (Fontana and Frey 1994) or “natural interviews” (Davies 1999) with participants. These interviews occurred in the form of conversations that arose out of the work under observation, with the aim of understanding or clarifying the participant’s perspective (Swanson 1986). These flexible open conversations with participants were opportunistic (Chenitz 1986), being held wherever and whenever the opportunity presented - in the office, the clinic, the hallway, the car, when walking and standing outside while the participant had a cigarette. The spontaneous immediate nature of these interviews offers opportunity for the participants to express themselves freely (Swanson 1986; Chenitz 1986; Fontana and Frey 1994; Davies 1999).

As well as the naturally occurring interviews, I undertook planned “unstructured” interviews with the participants (Fontana and Frey 1994). As noted previously, I undertook unstructured interviews with a director, a senior nursing project officer, the members of the HORT and six nurses that were involved in the construction and development of IBIS. Conducting unstructured interviews was appropriate as the purpose was to explore issues and shape a focus of the research (Fontana and Frey 1994; Davies 1999). Each of these interviews was arranged ahead of time, and held in a room with only the participant and myself present. These interviews were very straightforward and simply began with an open-ended question whereby I enquired into the participant’s work and links with the IBIS and MINET program. The response from the participant then provided the direction for the interview to unfold. The length of the interview was dictated by two main factors. Firstly, the amount of time the participant could allocate given their respective responsibilities. When planning the interview I suggested a period of an hour normally provided an appropriate length. Secondly, the complexity of issues that arose in relation to the participant. For a number of

participants I conducted several interviews as their roles and participation in the construction and development of IBIS was extensive.

Thirdly, during the period with the CFHNT I undertook 11 taped semi-structured interviews with participants, called “ethnographic interviews” (Davies 1999) or “reflexive interviews” (Hammersley and Atkinson 1995). These interviews were arranged with the participants ahead of time and they all, bar one, were held in the counselling room in the community health centre. The other was conducted in the clinic room, as the counselling room was booked at the time. Each interview was conducted one-on-one, with only the participant (nurse) and myself present. The interviews were held in the middle of the period spent with the CFHNT, after I had a length of time to become familiar with the setting, and the nurses’ work; conversely the nurses had a period to become familiar with me (Mays and Pope 1995b). Issues from the academic literature and my observations of the work of the CFHNT provided the topics for these interviews. In particular, I was interested in how they had come to learn their practice; where they had learnt the information and knowledge necessary for practice; how the artefacts they used shaped their practice; the influence of other people upon their practice; and how participation in the activities of the team – the informal and formal meetings - contributed to their understanding and development of practice. I would begin an interview by asking the nurse an open-ended question about their role and how they had learnt the practice of early childhood nursing. I then explored the work and practices of the nurses with their responses shaping the direction of the discussion. The transcription of all interviews was done by myself. The transcripts of the interviews were presented back to the participants for consideration and further discussion. This resulted in three further planned taped interviews, which were conducted as described here.

While I approached all members of the CFHNT to participate in the ethnographic interviews, several members declined, an occurrence in research that is not uncommon (Hammersley and Atkinson 1995; Davies 1999). Some participants

held concerns about the privacy of the interviews and who would have access to the recordings or transcripts. Despite my assurances about the security of the tapes and access to the transcripts, some participants could not be convinced otherwise. This I found perplexing as several participants who declined had been, and subsequently remained, very open during the remainder of the research. This was one experience that reinforced for me that the issues of access and consent are an ongoing process of negotiation for all activities throughout the research period.

3.1.3 Document analysis

During the research document analysis, or ethno-document research, was used to complement the above two data collection strategies (Lincoln and Guba 1985; Dawson 1997; Bryman 1998). The researchers in the Simpson Centre provided me with access to the shared computer drives containing the funding submissions, papers, reports and conference presentations that related to IBIS and MINET. Similarly, when with the CFHNT I was able to access the policies and procedures that underpinned their work, and examine the organisational and clinical forms the nurses were required to complete. As well as examining and reading the documents myself, this analysis also involved discussion with the participants about the documents and how they understood and used them in their work (Miller 1997). Through this I was able to contextualise, interpret and understand their conduct with these artefacts (Giacomini and Cook 2000a) and observe how they became integral to their practice (Hammersley and Atkinson 1995; Wenger 1998a).

3.1.4 Respondent validation

“Respondent validation” (Mays and Pope 1995; Creswell 1998; Mays and Pope 2000; Bloor 2001) is the process of checking the research account with the

participants; this process has also been called member-checking (Lincoln and Guba 1985; Ely et al. 1991; Giacomini and Cook 2000a; Ritchie 2001) or member validation (Bloor 2001). Both Hammersley (1992) and Bloor (2001) caution that credibility is not to be based on whether the respondents agree with the research findings. They argue that due to biases inherent in the respondents' position, either due to the incapacity to be aware of influencing factors and/or deliberate manipulation of results, they may disagree with the findings. This view argues that respondent validation is not a criterion for the assessing the findings but rather another method to collect data (Hammersley and Atkinson 1991; Mays and Pope 2000; Bloor 2001). Accepting this argument, respondent validation has been primarily used as a strategy to reduce errors and identify areas of agreement and difference whilst producing further data.

When exploring the historical construction of IBIS I conducted three seminars with the researchers and HORT staff. In these seminars I discussed the literature and the understanding that I had formed of IBIS and the MINET program. The feedback from the researchers and HORT staff tended to be in the form of positive general comments without specific details. Nevertheless, the seminars were useful in that the positive comments from the participants confirmed my understanding of what I was observing.

Those participants from the CFHNT with whom I conducted taped interviews were given a copy of their transcript. When provided with their transcripts they commented on their speaking idiosyncrasies, expressing surprise and a degree of embarrassment at their expressions. This drew their focus away from the content so that many did not comment on the content or offer further ideas for consideration. As noted previously, the three nurses that did have comments then participated in a further interview.

Also during the research, I held many informal discussions with the participants to clarify observations, ideas and the understand that I was forming. The

feedback from such interactions provided further data for consideration and reflection. Respondent validation was also used with participants with the intention to further reciprocity. I believed this was achieved in part but not as successfully as I had initially hoped for. I understand there were two reasons for this. Firstly, several of the participants commented that they struggled to find the time to read completely the texts and transcripts given to them. Apart from working in demanding jobs, I considered a contributing issue was that the focus and design of the research was significantly different to their work. That is, the documents I provided were focused on issues associated with the organising and enactment of practice using a qualitative approach, whereas in the case of the nurses their focus is normally examining clinical issues, while for the researchers and HORT their expertise was in quantitative research. This result is not unique as I note that Manias and Street (2001) have also faced the same issue in their research.

This concludes the discussion about the data collection methods, and now the next part of this section details the data analysis methods used in the research.

3.2 Data analysis methods

Through the data collection methods discussed, I compiled a large number of fieldnotes, interview transcriptions and organisational documents that together comprise the unstructured data of the research. These documents have been used to highlight trends in talking and practice; they are not used for an inquiry into the motivations of the participants.

The research process has cycled between observation, reflection and literature exploration (Chenitz and Swanson 1986; Pope and Mays 1995). During the research, data collection and analysis proceeded together with description and interpretation developing in extent and complexity over time (Lincoln and Guba

1985; Patton 1999; Backman and Kyngas 1999; Schultze 2000). There was a blending of induction and deduction that brought together the empirical observations with the theoretical material (Dawson 1997; Langley 1999; Schultze 2000). Langley (1999) also notes that inspiration is a further element in the analysis process, but obviously not one that can be rationally explained.

During the research process I continually constructed and compiled “analytical ideas” (Backman and Kyngas 1999) or “memos” (Hammersley and Atkinson 1995; Sarantakos 1995). These memos incorporated ideas related to the conceptual ideas guiding the research and reflections upon the research. Some of these analytical ideas were “sensitising concepts” (Hammersley and Atkinson 1995), that is, used to provide a focus and sense of direction for further fieldwork with the participants. These memos and the fieldnotes have been explored together and become intertwined to construct the rich description of this study.

The extended period spent undertaking the fieldwork assisted the inductive process, as this has allowed time to reflect upon issues and for points from the reading to be explored with the participants (Wainwright 1997; Pope, Ziebland and Mays 2000). Over time these processes enabled a rich description of the phenomenon to be constructed, with the end result being an ethnographic text or descriptive analysis that locates the study within context (Boyle 1994; Creswell 1998; Crotty 1998). This detailed contextualising is an important component to enable empirical generalisation to be made (Hammersley 1992).

In the “sensemaking” (Weick 1995; Langley 1999) process of the collection and analysis of data, three strategies were interwoven into the research, that is narrative and temporal bracketing strategies (Langley 1999), and the integration of experience-near and experience-distant concepts (Geertz 1983).

The narrative strategy (Langley 1999) involves making a detailed story from the data and is regarded as an appropriate strategy for relaying the complexity and

richness of events (Lincoln and Guba 1985). This strategy has been used in understanding cultural change (Bartunek (1984) in Langley (1999)) and combined with literary analysis to explore technological change (Woicheshyn 1997). In the structure of a narrative, time can be effectively used to order events and to this end I used the temporal bracketing strategy (Langley 1999) to construct the text. Finally, to achieve the narrative the integration of experience-near and experience-distant concepts (Geertz 1983) has been utilised. As discussed previously, this involves examining the data identifying patterns, issues and themes and considering these in relation to theoretical material. The outcome is a constructed text that is a synthesis of experience and theory (Denzin 1989; Vidich and Lyman 2000), which “attributes” (Goodenough 1976) a theory of collective behaviour to members of a particular group.

Using these three strategies to construct the narrative also involved drawing upon my “headnotes” (Ottenberg 1990) to interpret and expand the fieldnotes. Using headnotes involves drawing upon my memory of the interactions, observations and emotions of the research. Headnotes are drawn upon when reading the literature or fieldnotes and/or discussing the research with colleagues. They provide a degree of depth and richness to the fieldnotes that cannot be fully captured in writing. When I read a fieldnote during the interpretation process, I found myself drawing upon my headnotes to provide insight into aspects of the event that were not the primary focus. To use a specific incident as an example, when considering the nurses’ verbal participation in their team meetings, my headnotes provided insight into the participation that was occurring through the artefacts that the nurses use. At the time, I was focused on whether all nurses verbally participated, but when reviewing the incident my headnotes illuminated the role the artefacts played in engaging the participation of some nurses.

This concludes the discussion of the data collection and analysis methods utilised in the research. The next section, the fourth section of this chapter, examines the actions taken to ensure the rigour of the research.

4. Credibility and verification

This fourth section presents the strategies utilised to ensure the rigour of the research. The quantitative notions, validity and reliability, have been re-conceptualised by a number of qualitative writers, whereby they argue for the concepts of credibility and verification (Lincoln and Guba 1985; Wolcott 1990; Lather 1991; Eisner 1991; Richardson 1994; Janesick 1994; Hill Bailey 1997). Validity and reliability, that is, the truth and accuracy of the data, are terms that derive from quantitative research (Chenitz and Swanson 1986). No qualitative study is perfectly repeatable, making reliability an inappropriate concept to strive for (Janesick 1994; Davies 1999). Similarly, other researchers have dismissed the notion of validity or seeking a single truth of a qualitative study (Wolcott 1990; Cutcliffe and McKenna 1999; Ritchie 2001). As discussed earlier, the seeking of 'truth' has not been my aim. Rather, I have endeavoured to present an honest account of the research (Cheek 2000; Jorgensen 2002). Attempting to apply quantitative views to qualitative research demonstrates inappropriate imposition of a different perspective (Morse 1991; Denzin and Lincoln 1994; de Laine 1997; Davies 1999; Ritchie 2001).

The notions of credibility and verification provide appropriate criteria for judging the research. These notions locate the research clearly within the qualitative, not the quantitative, domain (Lincoln and Guba 1985; Ely et al. 1991; Hammersley 1992; Wainwright 1997; Patton 1999; Giacomini and Cook 2000a, 2000b; Ritchie 2001). The intention is that the research process, data, decisions and outcome are made explicit so that the readers can examine them together, the aim being to produce an ethnographic text that offers a descriptive analysis of a

phenomenon. Johnson (1999) cautions, however, that achieving this outcome is more difficult than making the argument, with many studies appearing to slip into mysticism or positivism in the attempt.

To establish the credibility and verify the research findings, the employment of at least two strategies relevant to qualitative research is necessary (Creswell 1998; Mays and Pope 2000). To this end the following strategies are used within this research:

- Reflexivity
- Audit trail
- Prolonged engagement and persistent observation
- Clear exposition of methods of data collection and analysis
- Triangulation
- Peer review
- Rich, thick description

Each will now be discussed.

4.1 Reflexivity and audit trail

In the introductory chapters I have undertaken a reflexive discussion to examine the construction and development of the research, and myself as the researcher (Davis 1986; Johnson 1997; Creswell 1998; Patton 1999). A detailed audit trail has been outlined in chapter two, which discussed the unfolding of the research within the university context and the research sites, documenting the opportunities and decisions taken during the research (Lincoln and Guba 1985; Sandelowski 1986; Morse and Field 1995; de Laine 1997; Hill Bailey 1997; Denscombe 1998; Clarke 1999; Ritchie 2001).

4.2 Prolonged engagement and persistent observation

The research has involved prolonged engagement and persistent observation within the field setting (Lincoln and Guba 1985; Boyle 1994; Sarantakos 1995; Creswell 1998; Ritchie 2001). I have had a prolonged period engaged with the field setting with the research taking place over the period from February 2000 to May 2002. The enactment of the fieldwork has involved persistent observation. That is, undertaking the fieldwork has involved spending complete days and the majority of weeks with the participants, engaged with them in whatever activities they were undertaking. The research was performed in this manner to allow the enactment of extended and confidential relationships with the participants (Ely et al. 1991; Mays and Pope 1995b).

4.3 Clear exposition of methods of data collection and analysis

The introductory chapters have discussed the unfolding development of the research. This chapter has detailed the ethnographic approach and processes of data collection and analysis utilised to achieve this thesis. These actions have been undertaken to make explicit the research processes (Mays and Pope 2000) and demonstrate how the process and product are inherently related (Lincoln and Guba 1985). Such actions contribute to the rigour and trustworthiness of the research.

4.4 Triangulation

This research has used triangulation of data collection, data analysis methods and theory to secure an in-depth description and interpretation of the IBIS artefact and early childhood nursing practice. Some researchers argue that triangulation can also be used to establish validity (Johnson 1997; Davies 1999; Giacomini and Cook 2000a). However, as discussed, this has not been my aim.

Instead, I have adopted the approach of Mays and Pope (2000), that is, rather than as a test of validity, triangulation is used to encourage a reflexive analysis and to ensure comprehensiveness (Bloor 2001).

When conducting the research similarities and differences in the data emerged (Patton 1999). By using a range of data collection methods, the research has been able to identify and explore the differences and similarities, thereby ensuring completeness, not convergence (Sutton 1993; Patton 1999). Supporting this view, Madill, Jordan and Shirley (2000) similarly argue that differences are complementary rather than contradictory, thereby adding to the completeness of the research. The differences within the data are important and illuminating, assisting in constructing a comprehensive and complex text (Hammersley and Atkinson 1995). By triangulation of data collection, data analysis methods and theory confidence in the completeness of the findings has been increased, adding to the credibility of the research findings (Lincoln and Guba 1985; Ely et al. 1991; Miles and Huberman 1994; Mays and Pope 1995b, 2000; Hammersley and Atkinson 1995; Johnson 1997; Creswell 1998; Cutcliffe and McKenna 1999; Patton 1999; Ritchie 2001).

4.5 Peer review

During the research I have undergone peer review, making both seminar and conference presentations (Creswell 1998); alternatively this has been labelled sharing with “critical friends” (Guba and Lincoln 1994). As detailed previously, I have attended CCGRH at university on a weekly basis throughout the research period. This contact with research colleagues has provided both formal and informal opportunities for reflection, debriefing and presentations about the research as it has proceeded and developed. I have presented at the Health Outcomes Conference in Canberra 2000, and was accepted to present my

research, but unfortunately had to withdraw due to family reasons, to the 2001 International Health Services Conference in Wellington, New Zealand.

4.6 Rich, thick description

The product of the research, this ethnographic thesis, is presented in a rich thick description. The thesis details the phenomenon under study, the technologisation of practice and the context within which it is situated, the SWSAHS (Lincoln and Guba 1985; Boyle 1994; Wainwright 1997; Creswell 1998; Crotty 1998; Sofaer 1999; Giacomini and Cook 2000b). This description aims to seek verisimilitude (Davies 1999), that is, the text's ability to simulate and represent the events and interactions that have been described.

This concludes the discussion of the strategies utilised to ensure the rigour of the research. The next section, the fifth section of the chapter, discusses limitations of the research.

5. Limitations of the research

In this fifth section of this third chapter, there are four limitations to the research that will be discussed.

Firstly, a limitation of the research is that the focus has only been one experience of innovation and change in a particular set of circumstances. The research has focused only upon one organisation, the SWSAHS, and then a specific team of professionals who have been associated with the mobilisation of the IBIS. As discussed in the preceding chapters, as the research unfolded time and access did not allow for the inclusion of other early childhood teams from within the AHS. Similarly for these reasons, and as the resources for the research were primarily

provided by the AHS where the research took place, the inclusion of other teams from outside the AHS was not considered. Nevertheless, with this focus the intention is that explanatory, not predictive generalisations can be made to other cases and contexts (Wainwright 1997).

Secondly, a limitation of the research is that restriction that time, resources and university constraints placed on the research. Due to these factors, the period of observation for the research had to come to a close. However, the community under study and their practice continued to develop in a dynamic manner. Further fieldwork would no doubt have revealed new issues and challenges faced by the clinicians, for consideration as to how they are part of the ongoing technologisation of practice. This is a practical faced by all research and provides the opportunity for consideration of future research.

Thirdly, a limitation of the research is that a single researcher undertook all aspects of the research. That is, conceptualising the study, identifying and analysing the literature, and undertaking the data collection and analysis. As has been discussed in this chapter, to overcome this limitation effort was taken to check ideas, developing insights and conclusions with colleagues and research participants for feedback and quality of argument.

Fourthly, as has been acknowledged in chapter two, a significant influencing factor or possible limitation of the research, is the subjectivity of the researcher. Time and effort has been taken to reflect upon how this subjectivity has influenced the research process from affecting the selection of literature through to conducting the fieldwork. Conversely, this is a significant strength of the research in that this influence has been explicitly considered and acknowledged.

These four points highlight significant challenges faced in the research and how they have been considered and addressed. The following section, the sixth and final section, discusses the ethical issues associated with the research.

6. Ethical issues

This sixth and final section of chapter three discusses the ethical issues of the research.

In conducting the research, I complied with the ethical requirements of the UNSW, as they were at that time. When I commenced the research the Director of the CCGR advised that at that time the UNSW did not require ethical approval for post-graduate research. In addition, the necessity for ethics approval by the AHS was discussed with the Director and Principal Researcher of the Simpson Centre and I was advised the research was covered by the mandate of the Simpson Centre.

As I have discussed earlier in the thesis, all those who participated in the research did so on a voluntary basis. In fact, some nurses exercised the option of not participating, for when I began exploring the historical construction of IBIS several nurses declined to be interviewed. The decision for the research to focus on the activities of the CFHNT was based upon the voluntary agreement of the team to participate and the necessity for a manageable research project within the time and resources available. That is, gaining access to the CFHNT through the two NUMs, I attended a team meeting to discuss the research and the team was asked to participate in the research. All team members gave consent to participate. Consent was again sought and obtained during the study when the opportunity to stay with the team presented. Several nurses from the CFHNT declined to participate in the formal interviews conducted with the team, and there was no pressure placed upon them to participate. All the research data has been collected and analysed by myself and has been retained in a secure location to which only I have access.

Given the specific location and organisational focus of the research, the nursing team is clearly identifiable. However, the nurses' right to confidentiality was

respected and some information that was discussed was not included at their request. Information that is presented and identifiable to a particular individual was agreed to by that individual. Whilst many families were visited or attended a clinic where the research was taking place, no details about the families was recorded. I explained to the nurses and families that I was not observing the nurses' clinical practice but rather, how the nurses as a community negotiated, organised and enacted the technologisation of practice. Individuals or families were given the opportunity to decline the presence of the researcher, and, as noted in the previous chapter, this only happened on four occasions. On several other occasions, due to a high level of interest displayed by some families I discussed the broad aim of the research and displayed the specific notes I had taken when they were present.

There were times in my role as an 'informal social worker' where a nurse individually, or during a debriefing meeting, asked my opinion about a child protection aspect of a visit. These discussions required that I embrace the 'clinician' part of myself, and put aside for a short period the observational stance I normally enacted with the team. While at different times I oscillated between the two roles, I did not change my professional orientation to the team; I remained open, direct and honest on all occasions. In discussing clinical practice issues with the nurses I acted as I would in my formal position with Community Services, that is, I offered my professional opinion and the nurses were left to take what action they considered appropriate, in consultation with their NUM.

This oscillating experience heightened the ongoing tension of belonging and not belonging to the team, and on reflection, I think the experience is a clear representation of what was a common experience throughout the research generally. I had a legitimate but peripheral position with the CCGRH. My participation with the Simpson Centre was recognised but on the periphery and now with the CFHNT I found myself in a similar position. I have found that being aware of and living with this belonging-not belonging tension is the experience of

conducting research. To rephrase, as I have discussed earlier in the thesis, in undertaking this research I was moving from a position of 'clinician' to construct and enact the conduct of a 'researcher'. In this way, the usual risk of 'going native' was to a degree in fact reversed; I was a clinician who was 'going social scientist'. Initially because of my particular background, I had to continually monitor myself to ensure that my focus was upon the research issues and not the content of clinical practice. I found the process of research to be about learning how to focus on particular issues and not others. To this end, this is where I found Spradley's (1980) fieldnote recording model, as discussed earlier in this chapter, extremely valuable in focusing my attention. I was aware that as time went on I came to think, speak and write about the events I was observing in a more and more abstract manner. In doing so, I have endeavoured to describe a complex three dimensional world of people, sounds, smells, actions, things and feelings into a two dimensional document using increasingly abstract concepts. That is, I took up an abstract, or academic, discourse as my own and using this discourse have translated the actions and experiences of people into an immutable mobile that is this thesis.

This concludes the discussion of the ethical issues of the research, and in doing so is the completion of the chapter covering the methodological approach to the research.

7. Conclusion

This chapter has outlined the methodology of the research. This has involved describing the ethnographic approach, identified as socio-logical, detailing the data collection and analysis methods, stating the strategies to ensure the rigour of the research, consideration of the limitations of the research and discussing ethical issues associated with the research.

The choice for an ethnographic approach came out the requirement to seek description and interpretation of events as they had, and continued to unfold. Chapter two accompanies this chapter by presenting a reflexive description of the construction of the research and researcher. The four data collection methods used in the research are participant observation, interviews, document analysis and respondent validation. These are combined with the three data analysis methods - narrative, temporal bracketing, and integrating experience-near and experience-distant concepts - that have been utilised to construct the ethnographic text. By using six interrelated strategies, the research has achieved a high degree of rigour thereby ensuring the findings are credible and verifiable.

This methodology has enabled a flexible approach, appropriate for the aim of the research and research setting. Through a flexible interconnected process of data collection and analysis has come the identification of issues and the development of theory related to the context of the phenomenon. From this basis, explanatory, not predictive, generalisations can be made to other similar cases and contexts (Wainwright 1997).

Four limitations to the research have been discussed. That is, the research has only considered one experience of innovation and change in one location; the necessity to restrict the research due to time, resource and university constraints; a single researcher undertaking the study; and the subjectivity of the researcher, which conversely is also a strength. These four points highlight significant challenges faced in the research and the current, and preceding discussion, has shown how they have been considered and addressed.

Ethical requirements were discussed with the Directors of the research centres at the UNSW and SWSAHS respectively. Consideration has been given to ensuring participation in the research has been voluntary and verbal consent has been obtained from participants throughout the study. The discussion has noted a particular challenge faced by the researcher has been not of 'going native', but

rather than that of 'going social scientist'. The outcome of which, has been the uptake of an academic discourse to produce an immutable mobile that is this thesis. The next chapter presents the initial theoretical starting points, the two questions the thesis seeks to answer, and discusses the thesis argument, as represented by the term the technologisation of practice.

Chapter Four: Theoretical points of departure and perspectives that inform the research

Knowledge resides in social relations, and knowing is part of becoming an insider in a community of practice. (Gherardi 2001: 133)

1. Introduction

This research is concerned with how practice is organised, learnt and changed and how practitioners within a community of practice employ knowledge and knowing. This research aims to show how through the technologisation of practice explicit knowledge becomes distributed within the artefacts for practice and tacit knowing becomes distributed across, and is continually enacted by, the collaboration of a community of practice. In doing so, the community enacts an increasingly standardised practice in which they discipline themselves while realising expertise.

The purposes of this chapter, is to detail the theoretical starting points for the research, discuss the perspectives that inform the research and present the two research questions the research seeks to answer; the structure of this chapter follows this outline.

2. The theoretical points of departure

This section discusses the four theoretical points of departure of the research. As noted previously these points of departure are, the theory of a “community of practice” (Lave and Wenger 1991; Wenger 1998a), the notion of an “immutable mobile” (Latour 1986), and the concepts of “governmentality” (Foucault 1979; Rose 1996, 1999) and “governance” (Rose 1999; Coupasson 2000; Flynn 2002).

This section is comprised of three parts. Firstly, the community of practice theory and secondly, the notion of an immutable mobile are discussed. Finally, the interrelated concepts of governmentality and governance are discussed together.

2.1 *The community of practice theory*

This research uses the community of practice theory (Wenger 1998a) as one point of departure to construct the technologisation of practice. Lave and Wenger (1991) together proposed the concept of a community of practice in their book *Situated Learning: Legitimate Peripheral Participation* and Wenger (1998a) then developed the theory in his book *Communities of Practice: Learning, Meaning and Identity*. This theory is drawn upon to explain the collaborative conduct and practice of the nurses, and to reveal how formal knowledge and tacit knowing is learnt, utilised and shared by the members of the community.

While accepting the majority of the Wenger’s (1998a) theory, this research will show that the theory needs to be slightly reconceptualised in two ways. Firstly, Wenger has argued that different resources realise the three different dimensions of a community, which are mutual engagement, joint enterprise and shared repertoire. In contrast, this research will show that the resources simultaneously realise all three dimensions of a community. Secondly, and similarly, the research shows that, in contrast to Wenger’s presentation of the modes of

belonging, all three modes are simultaneously realised by the resources of the community. This means that when the resources of a community are changed, this changes all the dimensions of and ways of belonging to a community, and consequently the community as a totality changes. For example, the introduction of a new artefact, the EPDS or the IBIS, into the CFHNT alters the enterprise of the community, provides a new way for the community to engage with one another and adds to the shared repertoire of the community. As a result the practice of the community is changed, and this changes the community in relation to other people, that is, they become aligned with other people in other places, or to use my terminology, they become engaged into extended relationships of accountability.

This first part of this section is broken into six parts and structured as follows. The concept of a community of practice is firstly outlined, and secondly the noting of similar but differently named concepts in the literature is undertaken. Then the dimensions of a community and modes of belonging as outlined by Wenger are detailed, and the section ends by presenting a re-conceptualisation of the dimensions and the modes respectively.

2.1.1 A community of practice

The community of practice concept offers an explanation of how people learn, work and change together, situating their activities within a social and material context (Lave and Wenger 1991; Wenger 1998a). Communities of practice have been discussed in the following ways:

Over time, this collective learning results in practices that reflect both the pursuit of our enterprises and the attendant social relations. These practices are thus the property of a kind of community created over time by the sustained pursuit of a shared experience. It makes sense, therefore to call these kinds of communities communities of practice. (Wenger 1998a: 45)

and,

A community of practice is defined as a community of people who are engaged in a common endeavour by mutual agreement (whether tacit or explicit) and who come to develop and share ways of doing things, ways of talking, beliefs, values – in short practice. (Freed 1999: 258)

and also,

In communities of practice, relations are created around activities, and activities take shape through the social relations and experiences of those who perform them so that knowledge and skills become part of individual identity and find their collocation in the community. (Gherardi and Nicolini 2000: 10)

As is being described through this collection of quotes, a community of practice highlights the inseparableness of individuals and their socio-physical context. Reflecting this inseparableness, the following characteristics of a community of practice have been identified by Wenger (1998a: 125-126):

- Sustained mutual relationships – harmonious and/or conflictual.
- Shared ways of engaging in doing things together.
- The rapid flow of information and propagation of innovation.
- Absence of introductory preambles, as if conversations and interactions were merely the continuation of an ongoing process.
- Very quick set-up of a problem to be discussed.
- Substantial overlap in participants' descriptions of who belongs.
- Knowing what others know, what they can do, and how they can contribute to an enterprise.
- Mutually defining identities.
- The ability to assess the appropriateness of actions and products.
- Specific tools, representations, and other artefacts.
- Local lore, shared stories, inside jokes, knowing laughter.
- Jargon and shortcuts to communication as well as the ease of producing new ones.
- Certain styles recognised as displaying membership.
- A shared discourse that reflects a certain perspective on the world.

The community of practice concept highlights that participation constructs social relationships and through such relationships, an individual discovers what to do in the course of participating (Lave and Wenger 1991; Hutchins 1995; Wenger 1998a). Through the process of participating, people become members of a community of practice resulting in a united experience of practice, learning and knowing.

The concept of “legitimate peripheral participation” (Lave and Wenger 1991) has been proposed to explain how identities are fused within a community. Through legitimate peripheral participation an individual learns how to participate within a community of practice.

Legitimate peripheral participation refers both to the development of knowledgeable skilled identities in practice and to the reproduction and transformation of communities of practice. (Lave and Wenger 1991: 55)

Derived from Vygotsky’s (1986) notion “zone of proximal development”, legitimate peripheral participation offers an explanation as to how newcomers learn the norms, values, language and conduct necessary to participate in the community. The term legitimacy speaks to access of a community. Only with access can a new member participate in the community to become a member of the community. The term peripheral highlights that the new member needs to be exposed to the totality of practice, with all the nuances and complexity that this includes. Participation enables the construction of relationships and involvement in the activities of the community, including the negotiation of meaning within the community. Through legitimate peripheral participation in a community of practice a person learns and constructs a new identity by becoming part of a social world (Brown and Duguid 1991; Lave and Wenger 1991; Gherardi, Nicolini and Odella 1998; Wenger 1998a).

The community of practice concept is not unique within the literature, with a host of other writers conceptualising similar notions. The next part notes the similar but differently named concepts.

2.1.2 *Similar but differently named concepts within the literature*

As has been discussed, the community of practice concept offers an explanation of how people learn, work and change together, situating their activities within a social and material context. The community of practice concept is not unique, with Constant (1980, 1987) having conceptualised a strikingly similar idea prior to, and independent of, Lave and Wenger; Constant in fact used the slightly different label, “community of practitioners”. Similarly within a broad range of literature, there are a number of other ideas that correspond to the community of practice concept, albeit with a different names. They all attempt, in varying degrees, to address and integrate aspects associated with knowing, organising, learning and practice. Essentially these different terms reflect a common theme - that people together construct meaning and purpose that is manifested by their discourses and practices, and through this knowledge is constructed and learning is enacted. The similar ideas are named as follows and in appendix three a short explanation of each idea can be found:

- Communities of concept users (Toulmin 1972)
- Thought collectives (Fleck 1979)
- Community of practitioners (Constant 1980, 1987)
- Occupational community (Van Maanen and Barley 1984)
- Learning community (Senge 1990)
- A self-organising team (Nonaka 1994)
- Communities of knowing (Boland and Tenkasi 1995)
- Community of interaction (Nonaka and Takeuchi 1995)
- Community of purpose (Warren 1996 in Liedtka 1999)

- Knowledge activists (von Krogh, Nonaka and Ichijo 1997)
- Community of competence (Snowded 1999)
- Communities of interest (Arias and Fischer 2000)

With the exceptions of Constant's work and the work on occupational communities, Wenger's ideas are much further developed than the others. In addition, Wenger particularly emphasises, much more strongly than the others, the integration of mind and body as a key to understanding practice, learning and identity. Further still these similar ideas contain an important assumption, sometimes made explicit but at other times left implicit, that separates them from that of the community of practice. The above concepts, directly or indirectly imply, that the 'community' being constructed and evolving is a positive and harmonious one. This is where the community of practice theory diverts from these similar concepts, as this assumption is not shared. Wenger (1998a: 77) notes the following:

Because the term community is usually a very positive one, I cannot emphasise enough that these interrelations arise out of engagement in practice and not out of an idealised view of what community should be like. In particular, connotations of peaceful coexistence, mutual support, or interpersonal allegiance are not assumed, though of course they may exist in specific cases. Peace, happiness, and harmony are therefore not necessary properties of a community of practice.

and then continues shortly after,

Communities of practice are not intrinsically beneficial or harmful. They are not privileged in terms of positive or negative effects. (Wenger 1998a: 85)

Hence while these other ideas portray their communities as inherently positive, a community of practice may or may not be, depending on the specific circumstances and context where it exists.

These two points, that is, being more developed theoretically and an open question as to whether the community is beneficial or harmful, are what separates the community of practice concept from the other similar ideas within the literature.

The phrase “constellations of practices” (Wenger 1998a) has been used to describe the level above an individual community of practice, to name and highlight that communities interrelate with other such communities. Theoretically the concept has not yet been developed as fully as that of the community of practice, but remains at a descriptive understanding. Within the literature two other terms have been proposed for describing interrelated communities – “communities of communities” (Brown and Duguid 1991) and “communities of interest” (Arias and Fischer 2000). These terms effectively refer to the same idea, that is, they are descriptive terms used to emphasise that communities interrelate to one another.

The next two parts now examine the details of the community of practice concept, and the two following sections then present a re-conceptualisation of these. Now following, the dimensions of a community and then the modes of belonging are explored.

2.1.3 *Dimensions of a community of practice*

Wenger (1998a: 73) has detailed three dimensions to a community of practice, and has diagrammatically represented these dimensions as follows.

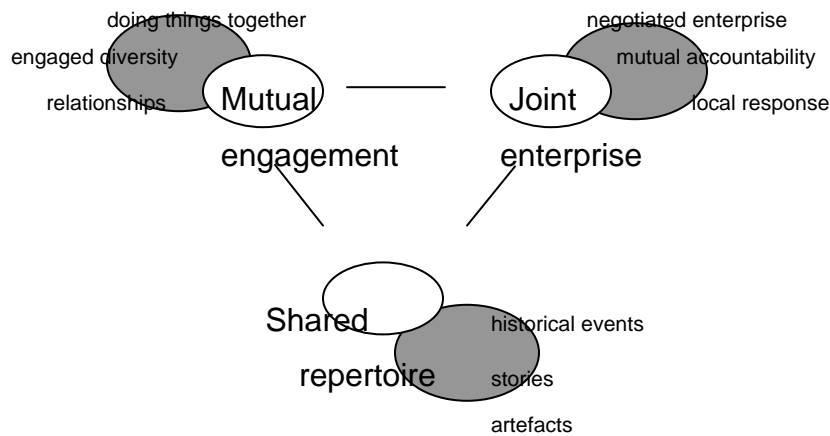


Diagram 4.1 Dimensions of a community of practice

Wenger uses the 'grey bubbles' to elaborate slightly on the properties or resources of each of the dimensions. Mutual engagement includes engaged diversity, doing things together and relationships; joint enterprise includes negotiated enterprise, mutual accountability and local response; and shared repertoire includes stories, artefacts and historical events. The three dimensions will now be detailed further.

The first dimension of a community of practice is "mutual engagement" (Wenger 1998a). The human component enabling mutual recognition is what is important, that is, being able to emotionally engage with other people. The capacity to initiate, recognise and respond to others is the mutuality that enables participation. Mutual engagement implies relationships, processes, place and time. Through interaction engagement – relationships, practices and competencies – are constructed within a socio-spatial-temporal location. Practice is the very real actions, experiences and negotiated meaning resulting from people engaging to work together. Through the process of mutual engagement identities are constructed and shaped unique to that community of practice. Being a member of a community of practice involves the demonstration of

competencies, which have personal and collective aspects, and only through the experience of mutual engagement can such competencies be acquired.

The second dimension of a community of practice is a “jointly negotiated enterprise” (Wenger 1998a), which has three components. Firstly, a jointly negotiated enterprise is based on a collective process of negotiation. This is not meant to imply everyone agrees on the same thing, but rather that the process is a collaborative one; each person’s practices are interconnected and together their practices emerge in the specific situation. The process of negotiation between members is both explicit and implicit, and is ongoing. Secondly, for the members the action of pursuing the enterprise defines the enterprise. That is, there is an inherent link between the process and the product of the enterprise, whereby they both continually shape each other. An important point to note is that while the community of practice is shaped by the broader context, which is beyond the control of the members, the members’ practices are their locally negotiated response to the broader context. In this way, the practices are both global and local in their characteristics. Thirdly, pursuing the jointly negotiated enterprise constructs accountability among the members of the community of practice. This involves knowing the explicit and implicit rules and negotiated meanings of the community. As a result, accountability is comprised of both reified and tacit elements and is the practice of competency within the community. Accountability refers to undertaking the work and interactions by which the work gets completed. Through completing the responsibilities of the community, the participant’s relationships are constructed and accountability to one another results.

The third dimension of the community of practice is the construction of a “shared repertoire” (Wenger 1998a). This repertoire combines both participative and the reified artefacts that are used for the negotiation of meaning. That is, how people speak, act, interact and the artefacts they use together are constructed collectively and form the resources of the community. The construction of a

shared repertoire represents the lived history of the community. The way the members interpret and use the shared repertoire of the community is how the community is continually reproduced; this is the ongoing negotiation of meaning through this living history. This negotiation involves ambiguity, as interpretation and reinterpretation is continually occurring, thus providing a link to the history of the community and simultaneously it is a force for change. In each and every action and interaction, the members of the community draw upon and recreate their shared repertoire, or living history, to construct their identities and the future community.

The next part now explores the modes of belonging to a community of practice.

2.1.4 Modes of belonging

In explaining the formation of identity and learning Wenger (1998a) proposes three distinct modes of belonging: engagement, imagination and alignment. These modes have been diagrammatically represented as the dimensions of the community of practice was previously, that is:

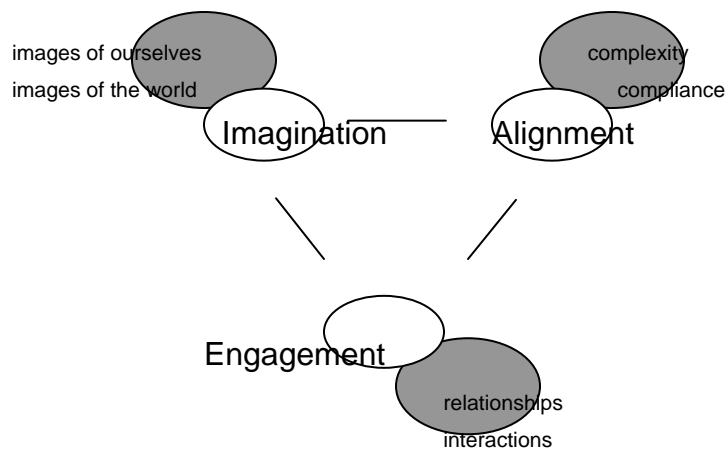


Diagram 4.2 Modes of belonging

Again Wenger uses the 'grey bubbles' to slightly elaborate on the resources of the modes. Imagination includes images of ourselves and images of the world; alignment includes complexity and compliance; and engagement includes relationships and interactions.

Engagement is participation within a community of practice involving the negotiation of meaning (Wenger 1998a). Our limitations as living beings, physically restricted by space and time, and psychologically-emotionally regarding the complexity we can manage, provide a boundary to engagement. As a mode of belonging this is the strength and limitation of engagement. Through engagement an individual has power, to negotiate and shape the enterprise, and this in turn constructs our identity. Through engagement in a practice this can open up an individual to a broad history and relations with others, or restrict an individual to a local situation devoid of connections beyond the immediate.

Imagination is the process of belonging whereby an individual, through social interactions extends beyond the here and now, constructing new and different images of themselves and their world. In doing so they "transcend engagement" and the local circumstances (Wenger 1998a). The communal experiences and the social interactions locate imagination beyond an individual experience and ensure that the creativity is a social process. Imagination enables a community to unite the past, present and future revealing new perspectives and possibilities. The danger is that this process can become detached from practice and result in non-participation.

Alignment is the process by which participants become connected into a bigger enterprise (Wenger 1998a). Belonging is achieved through the alignment process by which individual actions are connected, bridging time and space. Through alignment an individual or community exercises power when they enact the requirements of a style or discourse, and conversely an individual or community

can be subject to the power of alignment when required to follow directives. The connection and coordination of actions magnifies their potential and power, but conversely can trap and restrict a community's capacity to negotiate their part within a broader enterprise.

Wenger (1998a) argues that the work of belonging, through these three modes, is necessary for learning and identity - forming the community is the work of engagement; reinvention of the community is the work of imagination; and coordination of the community is the work of alignment.

The first four parts of this section have described and detailed the concept of a community of practice, including noting the similar but differently named concepts within the literature. The remaining two parts now present two changes to the conceptualisation of the theory, firstly to the dimensions of a community and secondly to the modes of belonging.

2.1.5 Changes to the theory regarding the dimensions of a community

The resources used to enact mutual engagement, a shared repertoire or a joint enterprise have been described and represented as separate by Wenger (1998a). This research will show that this is not the case, that in fact the resources realise all three dimensions simultaneously. Collectively, or even individually, the members draw upon the resources in the process of enacting the community; the resources do not belong singularly to one particular dimension and not to the others.

Recall that Wenger (1998a) has represented the dimensions of a community of practice using the following diagram:

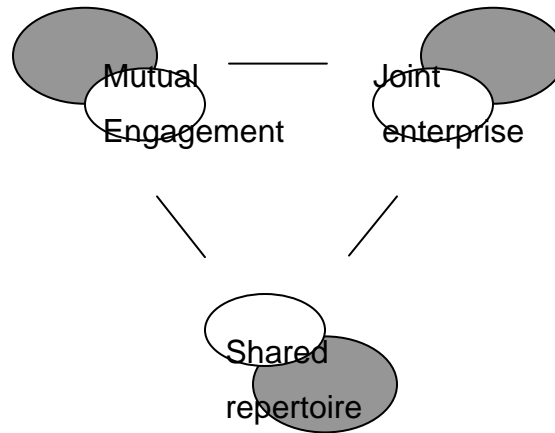


Diagram 4.1 Dimensions of a community of practice

As noted, Wenger uses the 'grey bubbles' to elaborate slightly on the resources that realise each of the dimensions of the community. Mutual engagement includes engaged diversity, doing things together and relationships; joint enterprise includes negotiated enterprise, mutual accountability and local response; and the shared repertoire includes stories, artefacts and historical events. Interestingly, Wenger while representing the three dimensions with the resources to support them makes no attempt to explicitly explain the grey bubbles or resources within his text. The reader is left to assume that they are what manifests the three dimensions.

In contrast to this theoretical representation by Wenger, the empirical chapters that follow will show how the resources are multi-dimensional and realise all three dimensions at the one time. Two examples drawn from the ethnography with the CFHNT will be used to illustrate the point.

Firstly, a common resource that realises all three dimensions of the nursing community are the stories the nurses tell one another in the course of their days together. Their stories provide a common repertoire by which the nurses circulate their learning and tacit knowing with each other. The telling of stories is a simple

but highly effective conduct by which the nurses mutually engage with each other and provide access to each other's practice. In this engagement the stories are used by the CFHNT to define and explain their joint enterprise to themselves and their colleagues. In this way the stories enable the nurses to enact the three dimensions at the one time. By way of contrast, Wenger locates stories within the single dimension of shared repertoire.

Secondly and in a similar way to the nurses' stories, any of the documentary forms the CFHNT use in their work enables all of the three dimensions. The forms are resources around which community participation and negotiation occurs, that is, engagement in practice. Being used in this way the forms are part of the physical resources that comprise one part of the shared repertoire of the community. Finally, knowing how to appropriately complete and discuss the forms is an important display of competency that contributes to the joint enterprise of the community. Again by way of contrast, Wenger locates forms, or artefacts, only within the dimension of the shared repertoire.

As these two examples highlight, the resources of the community are used to realise all three dimensions of the community; they are multi-dimensional. A story or artefact can be used by the participants to simultaneously enable the shared repertoire, mutual engagement and joint enterprise dimensions of the community. Nevertheless whatever dimension is enacted, the story-as-resource remains the same. This means that the community has a single 'pool of resources' that realises the three dimensions of the community; this understanding is represented diagrammatically below, with the grey circle representing the single 'pool of resources'. The resources simultaneously enact the three dimensions, which gives rise to the community in the one action. In this way this diagram visually emphasises the mutual enactment of the three dimensions, a point Wenger's diagram does not.

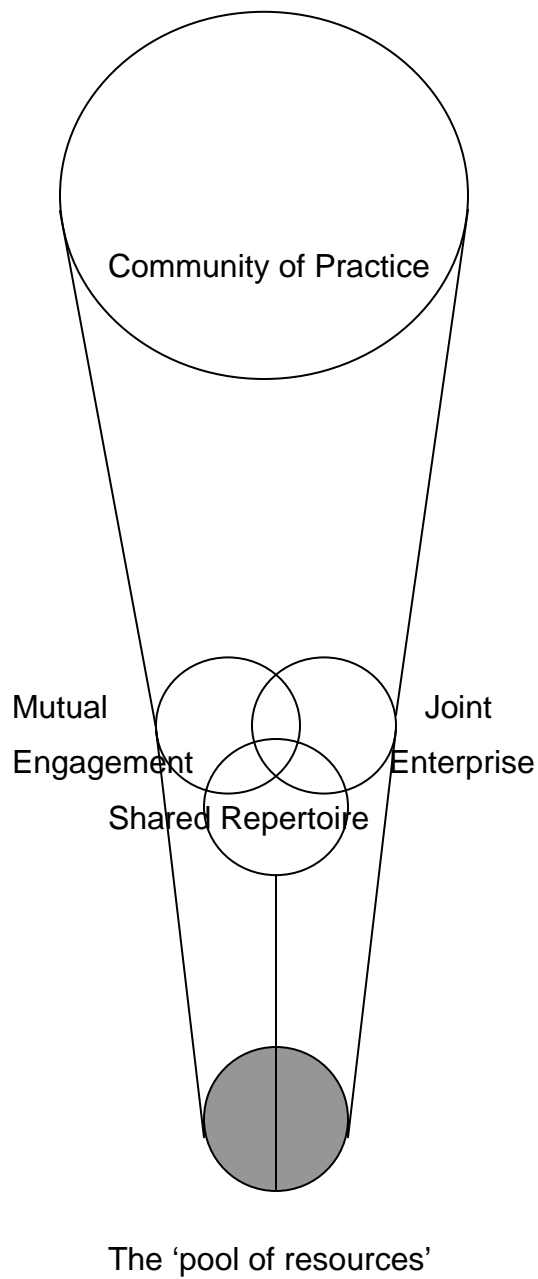


Figure 4.3 A community of practice arises from the integrated multi-dimensional resources.

The final part of this section reconceptualises the modes of belonging to a community of practice.

2.1.6 *Changes to the theory regarding the modes of belonging*

Similar to the dimensions of a community, Wenger's presentation of the modes of belonging can be reconsidered as a result of this research. That is, the resources of the community simultaneously realise all three modes of belonging. Changes to the resources changes the community's practice, belonging to the community and relationship of the community with other people in other places.

Recall that Wenger (1998a) has represented the modes of belonging using the following diagram:

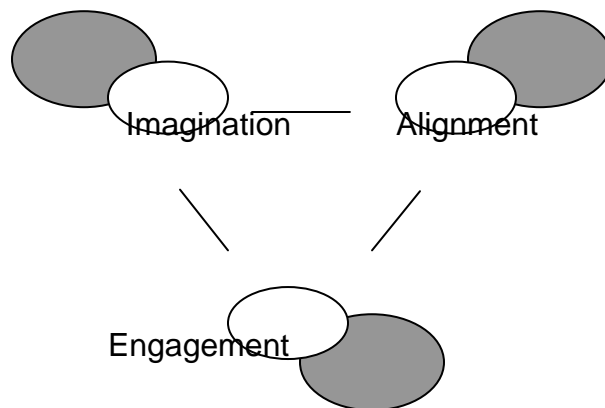


Figure 4.2 The modes of belonging

The same issues arise as before. The three modes are represented as linked but separate, and similarly Wenger uses the 'grey bubbles' to elaborate on the resources that manifest the modes. Imagination includes images of ourselves and images of the world; alignment includes complexity and compliance; and engagement includes relationships and interactions. Again these are presented but without further explicit explanation within the text, and the readers are left to make what sense they can.

The ethnography in the later chapters will show how the resources are multi-dimensional and realise all three modes at the one time. Again two examples will be used to emphasise the point.

Firstly, take the idea of the history of a community. As represented by Wenger history is linked only to engagement. However the history of the CFHNT community provides the link to the past and is the source of resources and artefacts for engagement in practice. The history similarly provides the nurses with a resource for imagination, a point of departure for consideration and enactment of different possibilities for future practice. Also the history provides a direction for alignment, a context for exploring and enabling coordination and integration within the broader enterprise of early childhood nursing, community health and the AHS. In this way, the history of the CFHNT community is a multi-dimensional resource that enables all three modes of belonging simultaneously.

Secondly, consider the example of an artefact, the IBIS. The IBIS is a resource for the nurses around which participation and negotiation occurs, that is, engagement in practice. The CFHNT community use the IBIS to establish and maintain alignment with the broader enterprise of early childhood nursing within the organisation. The IBIS is also a resource through which the community can imagine their practice being transported and considered elsewhere by other people within the AHS. Once again, the CFHNT community is utilising a multi-dimensional resource that enables all three modes of belonging simultaneously. (This same argument could be applied to the artefacts used by the claims processors in Wenger's (1998a) text.)

The resources in the two examples, that is the history of the community or the artefact IBIS, are drawn upon by the community to enact all three modes of belonging - engagement, alignment and imagination. The resources are not restricted or limited to just one mode, but used to realise all three simultaneously; the resources form a single 'pool' from which belonging is enacted. With this

understanding Wenger's diagram of the modes of belonging is re-conceptualised, with belonging now represented as a whole or alternatively as comprised of the three overlapping modes. The following diagram emphasises the interconnected and inseparable nature of the three modes of belonging, and that they each draw upon the 'pool of resources' to realise the community. Alternatively, the resources are multi-dimensional and simultaneously enact each mode of belonging.

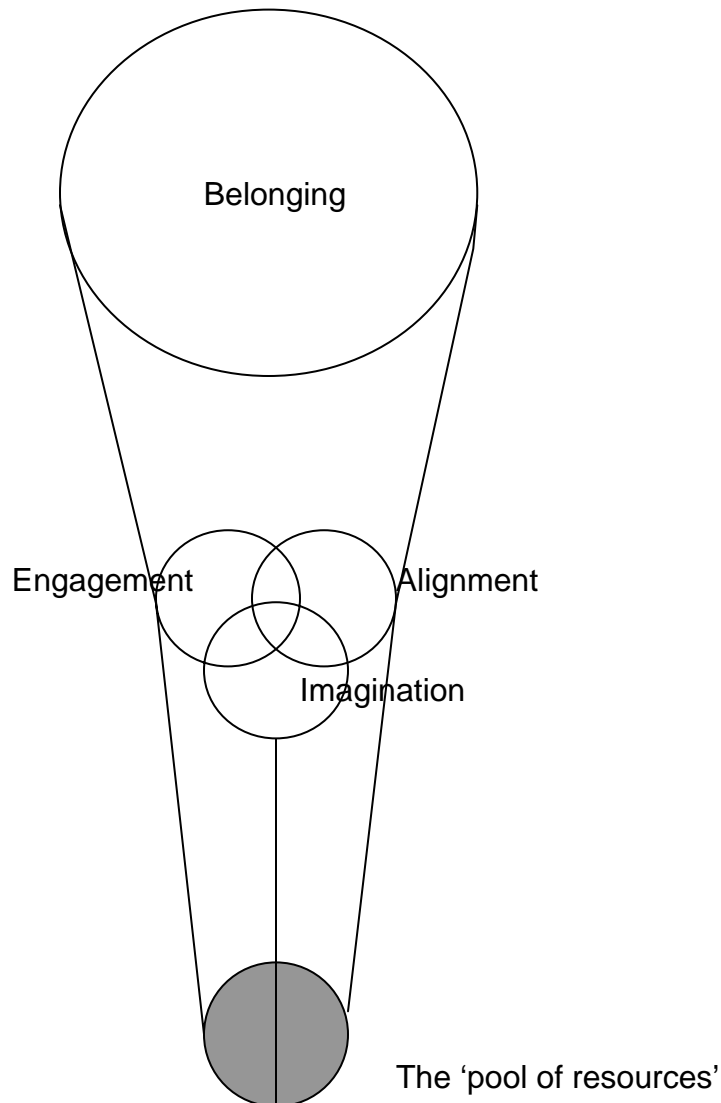


Figure 4.4 The modes of belonging and the integrated multi-dimensional resources.

This re-conceptualisation now enables a clearer representation of a related point made by Wenger, that is, the combination of the three modes is important for learning, and arises from the one source of resources. In the text presented by Wenger there is not a diagrammatic connection between the ideas of learning and modes of belonging. Now such a connection can be explicitly presented. In his text, Wenger (1998a) combines engagement and imagination to give rise to “reflective practice”, imagination and alignment to produce the “ability to act”, and engagement and alignment are combined together to form “coordinate practices”. Upon the new diagram presented below, the areas of intersection between the three modes of belonging represent these three learning combinations. This diagram now provides an integrated representation of the notion of belonging, the common resources used to realise belonging and the three combinations for learning that can occur. This is an improvement on the previous conceptualisation provided by Wenger.

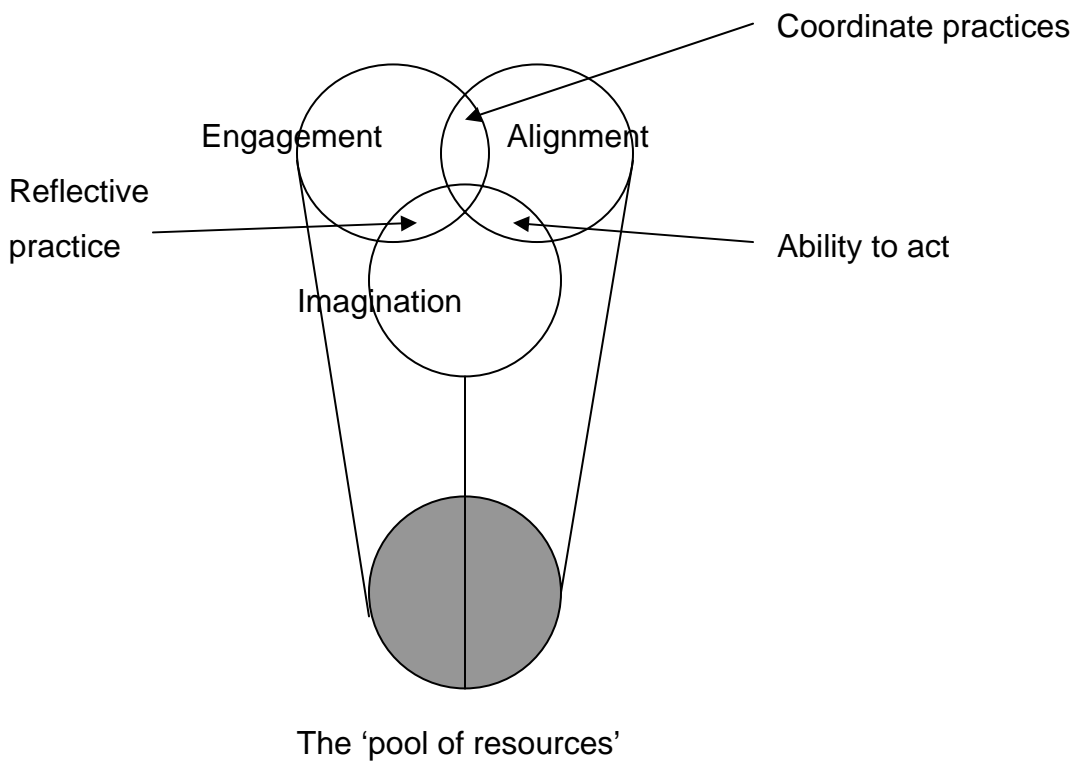


Figure 4.5 The three learning combinations for a community.

This concludes this first part of this section, which has presented the community of practice concept, located similar notions in the literature and also offered a re-conceptualisation of part of the concept. The next part of this section details the notion of an immutable mobile (Latour 1986).

2.2 *The notion of the immutable mobile*

The second of the four theoretical points of departure for the research is the concept of the “immutable mobile” (Latour 1986). Bruno Latour through focusing upon the practice of inscription has developed the notion of an immutable mobile to explain the way people argue, prove and believe, and in doing so make their ‘truths’ solid and durable. Latour (1986: 7; italics in original) described immutable mobiles as follows:

In sum, you have to invent objects which have the properties of being *mobile* but also *immutable*, *presentable*, *readable*, and *combinable* with one another.

An artefact that is mobile allows the transportation of inscriptions made in one place to be transported for consideration in another. In achieving this movement, attention is paid to ensure the non-changing nature of the inscriptions so that they can be seen by other people in other places, compared to other inscriptions and things, and combined to produce new inscriptions. By focusing upon the two dimensional images, rather than the three dimensional world, order is imposed and this enables the establishment of a two way connection between the here and now and the there and then. That is, in Latour’s (1986: 8) terms immutable mobiles allow “translation without corruption”.

The importance of the combinable characteristic is that the inscriptions can be cascaded together thereby allowing new and harder facts to be produced. With the advent of computing this characteristic has been considerably enhanced.

Latour notes an increasing trend in these computerised cascades in many different fields and calls for further research into the issue, of which this research is one example.

The construction and use, or assemblage and appropriation, of immutable mobiles in practice provides the nurses with a source of power. Drawing upon Wheeler (1969) and Clancy (1979) Latour notes:

It is hard to overestimate the power that is gained by concentrating files written in a homogeneous and combinable form. (Latour 1986: 28)

The collection of many small homogeneous inscriptions into the one place, or in Latour's terms a "centre of calculation" (Latour 1986), allows for the combination and manipulation of the information from which new understandings and facts emerge. This conduct is the process by which power is realised and enacted. Iedema (2001, 2003) has referred to this as "resemiotisation", as aspects of the real are made solid and durable.

The notion of immutable mobiles is drawn upon to show how the conceptualisation and enactment of practice within a community becomes increasingly defined and standardised. In doing so, immutable mobiles also offer a way to explain how knowledge becomes formulated and mobile within a community of practice.

The next part of this section discusses the final two theoretical points of departure for the thesis, that is, the notions of "governmentality" (Foucault 1979; Rose 1996, 1999) and "governance" (Rose 1999; Courpasson 2000; Flynn 2002).

2.3 *Governmentality and governance*

The third and fourth theoretical starting points for the research are now discussed. These are the notions of governmentality and governance respectively; the former and then the latter is considered.

The notion of governmentality comes from Foucault (1979) and he uses the idea to describe the disciplining and surveillance of both individuals and entire populations to order to achieve certain desirable outcomes; governmentality encompasses a theory of power and is enacted by rendering individuals calculable. As Holmes (2002) has recently noted following Foucault's initial works there are now a heterogeneous range of definitions available, and the conceptualisation of governmentality used by Rose is the one drawn upon in this instance (Rose and Miller 1992; Miller and Rose 1993; Rose 1996, 1999). Rose uses the term more broadly than Foucault to move beyond explaining the practices of normativity through the political apparatus of the state; he explains his approach as follows:

Government here is a way of conceptualising all those more or less rationalised programs, strategies and tactics for 'the conduct of conduct', for acting upon the actions of others in order to achieve certain ends. (Rose 1996: 12)

Governmentality involves the intersection of managing the population and the individual's management of themselves (Rose 1996, 1999). To this end, there is a profound shift from State control exerted through violence, or the threat of violence, to the legitimisation of authorities that control through knowledge. Rose's work (1996, 1999) was chosen because he offers a broader interpretation of governmentality than Foucault. That is, Rose has explored not just how populations and individuals are normalised and controlled but also how they are made "free", and in doing, so enjoined to engage in the governance of themselves. Where Foucault sketched an outline, Rose has specified the details

and intricacies involved, showing how people construct identities around, and willingly submit themselves, to the normalising gaze of experts sanctioned by the State.

Governmentality requires knowledge, and therefore relies on techniques to describe and make visible the population in question. O'Malley (1996: 205) offers this explanation of technologies:

..any set of social practices that is aimed at manipulating the social or physical world according to identifiable routines.

Establishing routines involves linking forms of knowledge – for example scientific, psychology and nursing, with devices - forms and/or physical instruments, and human actions - observing, writing and talking - to produce practical outcomes in terms of human conduct.

A technology of government, then, is an assemblage of forms of practical knowledge, with modes of perception, practices of calculation, vocabularies, types of authority, forms of judgement, architectural forms, human capacities, non-human objects and devices, inscription techniques and so forth, traversed and transacted by aspirations to achieve certain outcomes in terms of the conduct of the governed (which also requires certain forms of conduct on the part of those who would govern). (Rose 1999: 52)

Through the assemblage and appropriation of artefacts and tools, physical structures, ways of interacting and communication practices the conduct of a population, and the experts who would govern it, can be identified, visualised and reshaped.

The reshaping of the population, and those who govern, occurs though the processes of surveillance. Surveillance occurs through three interrelated mechanisms – totalising, individualising and self-regulating. That is, experts use

a range of technologies to examine, measure and assess individuals, locating them within a population and then they incite them to take action to rectify the defined problem. Through the use of disciplinary and pastoral power experts encourage individuals to become self-managing (Rose 1996, 1999; Gilbert 2001; Holmes and Gastaldo 2002). Disciplinary power involves hierarchical observation, normalising judgements and examination (Rose 1996, 1999; Henderson 1994; Gilbert 2001; Holmes 2002; Holmes and Gastaldo 2002; Peckover 2002). This requires the use of techniques and devices to measure, compare and assess individuals against one another and the population to which they belong. Pastoral power, exercised through the technique of the confessional, involves the expert inciting the person to speak, to write and to self-reflect about himself or herself. The individual reveals himself or herself and produces savoir or knowledge; the individual is assisted to construct a 'truth about themselves' (Miller and Rose 1993; Rose 1996, 1999; Gilbert 2001; Holmes 2002; Holmes and Gastaldo 2002; Peckover 2002). In this way, the person is objectified and made the focus of the expert gaze. If a person deviates from the norms of the population then they become a target for the ongoing attention and intervention of the experts. Individuals are incited to become self-managing, through the practices of confession and reflection, to monitor, assess and regulate their own behaviour. The active cooperative participation of the individual is a defining feature of governmentality.

To govern is not to crush their capacity to act, but to acknowledge it and to utilise it for one's own objectives. (Rose 1999: 4)

Together disciplinary and pastoral power provide a sophisticated means of shaping the conduct of individuals. Through these mechanisms the self is shaped to conform to social rules enabling the person to fit within a 'normalised' way of living (Dean 1999). A governmentality approach involves exploring the ways in which power penetrates into all aspects of life, shaping the thoughts, actions and wishes of individuals and the population.

In addition to the notion of governmentality, the associated notion of governance is also utilised as an initial theoretical point of departure. Governance is related to the notion of governmentality, and has been described by Rose (1999: 17) as follows:

Governance refers to the self-organising networks that arise out of the interactions between a variety of organisations and associations.

Governance is being used in a descriptive sense, and is seeking to understand the patterns and structure that emerges from the interactions of a range of actors, including the State (Rose 1999). In this vein, when exploring the ideas of clinical governance and governmentality Flynn (2002) has detailed a notion of self-governance for professionals, which is drawn from the work of Courpasson (2000), and has four aspects. Firstly, responsibility is specifically assigned; secondly, professionals orient their behaviour to maintain their reputation; thirdly, professionals adopt standardised criteria of performance, which they are involved in defining; and, fourthly, in recognition of their expertise, they allow some control over their autonomy.

These interrelated explanations of governmentality and governance will be utilised within this research to explain how communal discipline and expertise are enacted by a community of practice through constructing and/or appropriating artefacts, tools and immutable mobiles.

This concludes this section of this chapter, which has outlined the four theoretical points of departure for the research. The next section discusses these concepts in relation to the focus of the research.

3. The perspectives that inform the research

Drawing together the initial theoretical points of departure, this research seeks to explain how change has occurred through the technologisation of practice. In empirical terms, the research is detailing how in the SWSAHS early childhood nursing has become a specialised expert undertaking. This third section discusses three further points that require consideration. That is, the practice perspective and the view of organisations and knowledge underlying the research, need to be outlined as these have shaped the focus of the research.

There are three parts to this section. Firstly, the practice perspective taken in the research is acknowledged. Secondly, the view of organisations that shapes the research is discussed. The section concludes by examining the view of knowledge that underpins the research.

3.1 A practice perspective

Utilising the community of practice theory the research takes a social-cultural viewpoint, with the group as the point of focus for learning and practice (Brown and Duguid 1991; Cook and Yanow 1993; Lave and Wenger 1991; Easterby-Smith, Snell and Gherardi 1998; Wenger 1998a). Attention is focused on what people do in union, where and how they construct and coordinate their activities, artefacts and relationships within a physical and social environment. This 'practice' approach seeks to re-contextualise and localise the work of people, acknowledging that the where and how of practice are vital ingredients for knowledge and learning (Brown and Duguid 1991; Lave and Wenger 1991; Spender 1996; Clancey et.al. 1998; Gherardi, Nicolini and Odella 1998; Renshaw 1998; Wenger 1998a; Barab and Hay 2001; Orlikowski 2002).

The practice approach seeks not to label conduct within an organisation as the culture of the organisation, but does acknowledge that there is an overlap between the two (Contu and Willmott 2003). The culture of an organisation has been identified as an important influence on change (Kleiner and Corrigan 1989; Montuori 2000), often impeding or resisting any attempted change (Claver et al. 1999). However within the organisational literature 'culture' as a concept is problematic due to a lack of agreement on what the term stands for, and also how should culture be applied in organisational analysis (Meek 1988). While most often culture is portrayed as a system of shared values (Bloor and Dawson 1994; Schein 1996a, 1996b), other writers have argued that culture is an abstract concept and must be inferred from conduct, self-report and artefact (Schein 1996a; Helmreich and Merritt 1998). Perhaps not surprisingly, there has been limited success in attempts made to identify specific and observable features of an organisation's culture (Silvester, Anderson and Patterson 1999). In seeking to understand organisational culture, a direction that has emerged and achieved some success has been to focus on culture as the creation of shared meaning (Hill 1991). Research with such a focus has shown culture to be comprised of both shared perceptions and shared practices (Hofstede, Jeuijen, Ohayv and Saunders (1990) in Bloor and Dawson (1994)). Focusing upon the construction of shared meaning examines learning as a social process, whereby an individual learns how to participate within a group or community. In this way, research into culture and practice coincides.

From the practice perspective, an individual's actions are neither isolated nor independent. They are contained by and shaped by, as well as shaping, a unique context and set of social relationships. Together the actions and interactions of people within a socio-physical space construct social relationships, artefacts and a common purpose, that is, a community, within and through, which they enact their practices. This approach shapes the notion of learning:

Workplace learning is best understood, then in terms of the communities being formed or joined and personal identities being changed. The central issue in learning is *becoming* a practitioner not learning *about* practice. This approach draws attention away from abstract knowledge and cranial processes and situates it in the practices and communities in which knowledge takes on significance. (Brown and Duguid 1991: 48; italics in original)

The practice perspective on learning shifts attention from cognition and individual minds to interaction of people within their communities (Renshaw 1998). This perspective has given rise to the concepts of legitimate peripheral participation and community of practice that integrates learning, meaning and identity (Lave and Wenger 1991; Wenger 1998a). The associated body of literature, incorporating these ideas, argues that focusing attention upon work practice offers a perspective with increasing promise to describe and explain the processes of learning and change.

The image held of an organisation significantly shapes the view of learning, change and knowledge. When the organisation is viewed as a machine or a system, then the focus is on the flow(s) of information with learning and knowledge regarded as the collection and analysis of information, and change is associated with adjustments to the data processes. However, if the organisation is a site for the contestation and construction of meaning, then the focus for knowledge, learning and change is on how this occurs. The former is influenced by a modernist view of organisations and the latter a post-modernist view. In line with the practice perspective outlined, this research adopts a post-modernist view of organisations. These two views of organisations will be discussed, with the modernist followed by the post-modernist view.

3.2 *Conceptualising organisations*

Consistent with the practice perspective outlined, this research adopts a post-modernist view of organisations, rather than a modernist view. That is, the organisation is conceptualised as a site for the contestation and construction of meaning. The modernist view of an organisation will now be discussed, with the post-modernist view following.

3.2.1 *A modernist view of organisations*

From a modernist perspective organisations have been viewed as sites for the organising of production, built on rational mechanistic techniques and strategies (Gephart, Boje and Thatchenkery 1996). This perspective views the organisation as an entity, at once both an abstracted ideal and solid reality. As such the organisation has come to be viewed as the most effective system for the processing of information and the efficient utilisation of resources (Drucker 1994; Easterby-Smith, Snell and Gherardi 1998).

The organisation is conceived through an individual cognitivist image as a container and applier of knowledge, and learning is the maintenance, repair or enhancement of that resource (Gergan and Thatchenkery 1996; Araujo 1998). This individual cognitive perspective can be found particularly within the management studies literature that encompasses these ideas, and presented in the works of writers such as Argyris and Schon (1978), March (1991), Huber (1991) and Simon (1991). In such an organisation, learning is claimed to occur through the creation of integrated systems, both technical and human, that are able to turn data into information and then information into knowledge (Dobuzinskis 1997; Montuori 2000). Within this perspective there are two explanations presented for learning in organisations - an objective-technical view and a humanistic-political view (Easterby-Smith, Snell and Gherardi 1998).

The first explanation argues that learning is an objective and technical process; this results in emphasising the rational technical interventions with the images and metaphors of systems and machines invoked (Plsek and Wilson 2001). Information is objective and can be learned through data collection routines, and uncertainty can be dispelled through data analysis and this initiates action. This explanation leads to the development of sophisticated computer systems, comprising information databases and communication systems, which are portrayed as tangible evidence of the organisational learning efforts.

The second explanation takes a humanistic and political perspective, which then favours human agency interventions. Individual and team development, motivational inputs, strategic visions and empowerment processes are undertaken to direct the organising activities directed at learning (Hendry 1996; Easterby-Smith, Snell and Gherardi 1998). However, such a view has been criticised by other writers who have expressed concern for the use of language and lack of explanation for organisational learning (Kim 1993; Cook and Yanow 1993; Jones 1995; Gold and Watson 2001).

3.2.2 *The post-modern view of organisations*

The post-modern perspective, incorporating the social construction of reality and hence organisations, has been the focus of a growing body of literature within organisational theory (Daft and Weick 1984; Cooper and Burrell 1988; Burrell 1988; Cooper 1989; Burrell 1994; Gergen and Thatchenkery 1996; Watson 1997; Weinstein and Weinstein 1998; Ford 1999; Alvesson and Karreman 2000). This literature reflects a development from the static view of 'organisation' to the process of 'organising' (Rousseau 1997) recognising that people are actively involved in the process.

This perspective emphasises the communal interactions and relationships between people and material elements that takes place (Araujo 1998). The focus for understanding becomes how meaning is constructed, communicated and maintained, or altered, by individuals or groups of individuals within the organisation (Van Maanen and Barley 1984; Easterby-Smith, Snell and Gherardi 1998). To put this differently, learning and change involve the renegotiation of meaning (Hendry 1996; Easterby-Smith, Snell and Gherardi 1998; Brown 1998). Learning is through discussion, enactment and then reflection; this is the action of knowing (Ford and Ogilive 1996). To this end Gherardi and Nicolini (2000b), in Gherardi (2001), have advocated changing to use the term “learning-in-organising” to denote activity that enacts people, artefacts and their interrelations around a practice. To adopt this perspective, which focuses on the processes of organising, involves a significant shift from individual rational agency to communal negotiation, language as representation to language as action and empirical knowledge to the social construction of knowledge (Gergen and Thatchenkery 1996).

In line with the practice perspective outlined, this research adopts a post-modern view of organisations, rather than the modernist view identified previously. With this perspective, there is the necessity to examine how knowledge is conceptualised and then used by people within a community of practice.

3.3 *Knowledge and knowing*

Exploring the idea of knowledge the focus here is upon how the term is defined, conceptualised and used, rather than questions about the epistemology of knowledge.

Understanding and defining knowledge remains a very contested issue (Spender 1996; Raelin 1997; Augier and Vendelo 1999; Cook and Brown 1999; Eraut

2000; Schultze 2000; Stenmark 2000; Tsoukas and Vladimirou 2001; Orlikowski 2002; Fernie et al. 2003). Polanyi (1958, 1967) is credited with defining knowledge as being personal knowledge, not entirely subjective and not fully objective, and having the two interconnected aspects, explicit and tacit components; the tacit component supports the explicit knowledge, which is only a fraction of the totality.

The explicit knowledge is that which can be expressed in symbols and communicated to others through use of these symbols (Raelin 1997; Richter 1998; von Krogh 1998; Augier and Vendelo 1999; Koskinen 2000; Bloodgood and Salisbury 2001; Johannessen, Olaisen and Olsen 2001). Explicit knowledge can be codified and distributed as documents - manuals, procedures and/or texts (Baker, Baker, Thorne and Dutnell 1997; Stenmark 2000; Bloodgood and Salisbury 2001; Lang 2001) - and called "inert knowledge" (Squire and Johnson 2000), or "codified knowledge" (Eraut 2000) reflecting the decontextualised and static nature of the knowledge.

Boiral (2002) notes that the word *tacit* comes from the Latin *tacitum*, meaning that which is secret, hidden or mysterious. The ambiguity associated with tacit knowledge is simply summed with the now often quoted statement from Polanyi:

We know more than we can tell. (Polanyi 1967: 4)

Not surprisingly conceptualising and defining tacit knowledge has encountered more difficulty (Spender 1996; Augier and Vendelo 1999; Eraut 2000; Koskinen 2000). Further complicating the issue, a misunderstanding has emerged in the literature, due principally to a difference in explanation by Nonaka from how Polanyi used the term.

Nonaka uses Polanyi's term somewhat differently from what Polanyi himself did. Due to the strong influence of Nonaka's writings on the knowledge management discourse, this

misconception has been widely adopted. While Polanyi speaks of tacit knowledge as a backdrop against which all actions are understood, Nonaka uses the term to denote particular knowledge that is difficult to express. (Stenmark 2001: 6)

Based on Nonaka's understanding, Nonaka and Takeuchi (1995) have presented a model that purports to convert tacit knowledge into explicit knowledge, a view in sharp contrast to Polanyi's thesis (Stenmark 2001; Tsoukas and Vladimirou 2001), and one rejected recently (Fernie et al. 2003). Polanyi argued there are not two different types of knowledge but rather two interdependent dimensions - the tacit and explicit (Brown and Duguid 2001).

However there is an explanation that goes some way to bridging the difference in understanding. Altheide and Johnson (1998) identify a distinction in tacit knowledge whereby the term is used to mean general cultural knowledge and/or more specific situation and experiential knowledge; the former explanation corresponding to how Polanyi has used the term, and the latter representing the narrower understanding adopted by Nonaka. The tacit knowledge Polanyi was referring to implies a broader experience than Nonaka was applying the concept to, but both highlight the importance of the personal, subjective experience in knowledge construction.

Given the contested nature and inherent difficulty in conceptualising and defining tacit knowledge (Eraut 2000), the action of triangulation offers a strategy to reduce our conceptual and language limitations. The following three descriptions are presented to this end. Firstly:

...tacit knowledge comprises those skills and know-how we have inside our heads that cannot be easily expressed but which get augmented and shared via interpersonal interaction and social relationships. (Lang 2001: 48)

Then secondly, Raelin (1997: 564) has offered the following explanation:

Tacit knowledge is the component of knowledge that is normally not reportable since it is deeply rooted in action and involvement in a specific context. It thus reflects the active participation of the knower in the situation at hand.

And thirdly:

With individuals, tacit knowledge means intuition, judgment, common sense -- the capacity to do something without necessarily being able to explain it. With groups, tacit knowledge exists in the distinct practices and relationships that emerge from working together over time -- the social fabric that connects communities of knowledge workers. (Brown and Gray 1995: 80)

Taken together these three descriptions capture the essence of tacit knowledge identifying the importance of the social, local and practice aspects.

Three perspectives about knowledge have been developed, each shaped by a different appreciation of the importance of the explicit and tacit components. The three perspectives may be termed the cognitivist, individual and community views of knowledge. Each of these is now explored.

3.3.1 *A cognitivist perspective of knowledge*

A view of knowledge exists within the cognitivist perspective that simultaneously influenced the modernist view of organisations. Within this view, knowledge is considered explicit without a tacit component; this has been referred to as the “cognitivist perspective” (von Krogh 1998) and/or the “commodity view” of knowledge (Stenmark 2001). The emergence of the cognitivist view saw the tacit component of knowledge diminished and ignored. Knowledge became treated as an explicit, universal resource capable of being codified, stored and transmitted to others, without need of reference to original context. Knowledge became an

object, a thing that could be acquired and owned by both individuals and organisations for their own benefit and ends (Huber 1991 in Pentland 1995; Araujo 1998; Cohen 1998; Cook and Brown 1999). The person and/or the organisation are viewed as the 'container' that holds the knowledge (Araujo 1998; Wasko and Faraj 2000), and this view is dominated by the idea of logical reasoning and the image of the information-processing machine for both the mind and organisation.

3.3.2 *An individual view of knowledge*

Contrast the cognitivist perspective with the view whereby knowledge has been considered difficult to separate from human activity; this can be termed the "individualist view" of knowledge (von Krogh 1998; Hansen, Nohria and Tierney 1999; Wasko and Faraj 2000). Here knowledge is embedded in people, the tacit component, whereby they possess the framework to understand the knowledge for it to have meaning. Knowledge is owned by the individual, and transferred through human interaction (Hansen, Nohria and Tierney 1999; Fernie et al. 2003). In this view, while the cognitivist perspective still has dominance, the human element is recognised in the dynamics of knowledge creation (von Krogh 1998). The management literature has taken this view of knowledge as it offers the prospect that with the intervention of tools, such as the change management tools identified earlier, tacit knowledge can be made explicit, codified and controlled (Halid-Herrgard 2000; Ambrosini and Bowman 2001; Davenport 2001).

3.3.3 *A community view of knowledge*

In the recent period, there has been an alternative view of knowledge that has emerged. This view is one that considers that knowledge is embedded within a community, and that the tacit is as important as the explicit aspect (Lave and Wenger 1991; Lam 1997; Wenger 1998a; Brown and Duguid 1998; Cook and

Brown 1999; Gherardi and Nicolini 2000; Brown and Duguid 2001; Wasko and Faraj 2000; Lang 2001; Stenmark 2001). The context, and all that that makes up the context including people and material resources, shapes the construction and use of the knowledge as product (Barley 1996; Brown and Duguid 1998; Clancey et al. 1998; Barab and Hay 2001).

This in turn promotes a view of knowing as activity by specific people in specific circumstances. (Lave and Wenger 1991: 52)

Within this perspective, knowledge is constructed rather than discovered (Jankowicz 2001) and the construction takes place through social processes of human interaction (Pentland 1995; Araujo 1998; von Krogh 1998; Gherardi 2001; Stenmark 2001).

Through socialisation into a knowledge tradition people know how to act and utilise the explicit or objective component of knowledge in an appropriate manner and place. The community constructs, maintains and develops the knowledge, both explicit and tacit components, of its members. In this tradition the image of an iceberg has been used to describe the resource of knowledge (Haldin-Herragard 2000) – the visible part is the formal explicit aspect, while beneath the surface resides the tacit supporting aspect. While explicit knowledge is possible to store in a mechanical or technological way, such as an information system or procedure manual, the tacit knowledge component is mostly stored in human action (Cohen 1998). Hence the argument that knowledge can only really be shared by human processes and not codified or controlled (Polanyi 1958; Kogut and Zander 1992; Sveisby 1996; Shariq 1999; Lang 2001). Indeed the explicit codified knowledge cannot be appropriately utilised without the appropriate and practical contextual tacit knowledge (Lam 1997; Shariq 1999; Haldin-Herragard 2000). Previously this orientation has been described by Ryle (1954) as “dispositional knowledge”, incorporating know-what and know-how; using the example of chess, he explains that a person may know the rules of the game –

know-what, but this is different to being able to play the game – know-how, which comes from interaction with other people.

The community view of knowledge holds that the explicit and tacit aspects of knowledge are inseparable to make the flow of such knowledge embedded or “sticky” within a community (Szulanski 1996; Lam 1997; Brown and Duguid 2000) highlighting the distributed nature of knowledge (Barley 1996; Orr 1996); this has also been referred to as “embedded knowledge” (Badaracco 1991). This view offers an explanation for why knowledge within a professional community is so easily transferred, but can go largely unrecognised by other professions within an organisation (Brown and Duguid 2000; Smith and Alexander 1988). More recently, Brown and Duguid (2001) have questioned the idea of knowledge being “sticky”, instead arguing that the focus needs to be on the context not the properties of knowledge. They have argued that knowledge is not “sticky or fluid” per se, but rather the action of the people involved determines the outcome.

Consistent with the practice perspective and postmodernist view of organisations outlined, the research adopts a community view of knowledge, and in doing so focuses attention from disembodied knowledge to the activity of knowing. With this background and using the theoretical starting points, the next section presents the two questions the research seeks to answer.

4. The two research questions

The ongoing discussion, including detailing the theoretical starting points, provides the context for the focus of the research. From this basis the research seeks to explore the interaction between people and the artefacts they construct or appropriate, refine and are shaped by (Latour 1986, 1992; Gagliardi 1997; Araujo 1998; Renshaw 1998). The importance of such research into the practices and processes by which technologies come to be stabilised, and take on an

unremarkable character in different contexts has been noted elsewhere (Braa and Vidgen 1999; May and Ellis 2001). Pursuing this endeavour, this research seeks to make visible how practice is constituted and mediated by technologies that are appropriated and mobilised as resources for practice. This endeavour can now be phrased as two questions. Firstly, as articulated by Pan and Leidner (2003: 13), “what are the processes and mechanisms needed in order for employees to share their common knowledge with their peers in other communities of practices?”, or alternatively, what enables people within an organisation to share their knowing (Dixon 1997; Leonard and Sensiper 1998; King and Rowe 1999; von Krogh 2002; Wenger, McDermott and Snyder 2002). Then secondly, how is practice established and sustained in a specific context? (Maudsley and Strivens 2000; Hayes and Walsham 2001), or to rephrase, how does knowledge become formulated and thereby mobile? (Araujo 1998).

In addressing these questions, the research examines how a community of practice constructs and/or appropriates immutable mobiles, tools and artefacts to realise their knowing. Together these resources are the technologies of the community, through which discipline and expertise become entwined. With this focus, the thesis is developed to show how collaboration becomes necessitated under pressure of enacting increasingly complex work activities, an outcome being changing practices and extended accountability relationships, which enacts discipline while realising expertise. The technologisation of practice is the term used to define this integrated process and outcome. That is, in this research the technologisation of practice refers to the artefacts, conduct and processes through which the conceptualisation and enactment of early childhood nursing has become increasingly standardised.

5. Conclusion

This chapter has had three purposes. The first purpose has been to present the four theoretical starting points of the research. That is, the concepts of a community of practice, immutable mobile, governmentality and governance have been outlined. In particular, the community of practice concept has been explored, including a number of similar but differently named ideas in the literature. The characteristics and dimensions of a community have been discussed, along with consideration of the modes of belonging. Two changes to the theory have been advocated, one relating to the dimensions of a community and the other to the modes of belonging. In each case, the argument is made that the research will show how the resources utilised are multidimensional and realise all dimensions of the community or modes of belonging respectively.

Secondly, there has been an explanation of the perspectives that inform the research. The discussion has detailed that the research has utilised a practice perspective, a postmodernist view of organisations and a community view of knowledge. From this discussion the research is informed by the view that practice is enacted within a community, learning is identified as a social process, organising is the negotiation of meaning, and knowing is enacted and cannot be separated from practice.

Finally, the third purpose has been to present two questions the research seeks to answer. Firstly, what enables the sharing of knowledge between peers in different communities? Secondly, how is practice established and sustained in a specific context?

The research will show that through the technologisation of practice explicit knowledge becomes distributed within the artefacts for practice and tacit knowing becomes distributed across, and is continually enacted by, the collaboration of the community.

Through understanding how learning and knowing have been enacted this research aims to provide insight into how change and innovation occur, which is the initial brief of the research. With organisational change theories having grown out of learning theories (Hendry 1996), this approach has come full circle theoretically.

The following four chapters, from five through to eight, present the empirical details of the research. These chapters show how change has occurred through the increasing technologisation of practice. Each chapter takes as a focus one aspect of the technologisation of practice. Chapters five and six are linked through taking the IBIS artefact as the empirical focus, and cover aspects one and two respectively. Then chapters seven and eight are similarly interlinked through taking the CFHNT as the empirical focus, and they cover aspects three and four respectively.

Chapter Five: Standardising the conception and enactment of practice

“...there was a group of probably about 5 or 6 people that were really really keen in developing the forms, looking at the data and then interpreting what it meant in terms of practice and whether it made sense and whether it reflected what, what was being said as what we should be doing as best practice, all those sort of things... we needed to have an understanding of what it was we did, umm so you know that was such a broad base I guess to start from there, there were lots of opportunities then to have those discussions of how, what does it mean if we do this umm, you know do we make a difference if we do this, so is this the way we should be doing it, are we giving the right information, have we got the right people doing it umm, you know are there different and better ways we could address this same issue...”

Families First Project Officer, Interview 16/10/01

Learning is more than acquiring facts and techniques. It involves acquiring a way of looking at the world, of coming to possess that perspective embedded in a particular discipline and common wisdom about cause-and-effect relationships as shared by its practitioners. The actual way we learn is through participation in communities of knowledge by embodying their particular perspectives, prejudices and practices. (Lang 2001: 45)

1. Introduction

As noted in the introductory chapter this ethnography can be described as constructing a ‘history of technologisation’ (Callon 1986), which involves analysing the context, technology and ways the clinical practices and organisation have been affected (Beeson and Davis 2000). The next four

chapters present the empirical details of the thesis. Chapters five and six detail the construction, mobilisation and ongoing refinement of the early childhood nursing practice, as represented by IBIS, and then chapters seven and eight explore the enactment of practice by focusing upon one early childhood team. The uniting theme for all the chapters is to explore how change has occurred in the practice of early childhood nursing through the technologisation of practice, which has enabled and required new practices and relationships.

The focus for this chapter is the first aspect of the technologisation of practice, which refers to the standardisation of the conceptualisation and enactment of practice through constructing a multi-dimensional practice resource within a community of practice. There are two remaining sections to this chapter.

The next section, the second section of the chapter, begins by discussing the organisational context that initiated and shaped the emerging changes. This section shows significant change emerged from the motivation of a small group of community health nurses who simply wanted to “improve their practice”. To do this they enacted “bottom-up entrepreneurship” (Sarbaugh-Thompson 1998), to construct and exploit an opportunity to collaborate with the Health Outcomes Resource Team, a “discretionary or slack” organisational resource (Cyert and March 1963).

The third and final section explores the initial actions and processes by which the conceptualisation and enactment of early childhood nursing became increasingly collaborative, prescribed and standardised. This was achieved through constructing a multi-dimensional resource, IBIS. IBIS is shown to be an artefact within a practice (Wenger 1998a), a technology (Hill 1991; O'Malley 1996; Rose 1999), and an immutable mobile (Latour 1986).

2. An emerging context for change

This section discusses the context, interactions and luck that initiated the events that led to the standardisation of the conceptualisation and enactment of practice. There are two parts to this section. The action of “bottom-up entrepreneurship” (Sarbaugh-Thompson 1998), by a small group of community health nurses, who simply wanted to “improve their practice”, is first identified as the activity that initiated the change. Then the discussion notes the opportunity to collaborate with a “discretionary or slack” organisational resource (Cyert and March 1963), the Health Outcome Resource Team (HORT), provided the direction for the unfolding changes.

2.1 *The action of bottom-up entrepreneurship*

Nursing in Australia has changed significantly over the past two hundred years, from initial beginnings where the work was considered only suitable for the socially unacceptable (Schultze 1991), through to a highly respected profession in the recent period. As Bloomfield (1999: 1) notes:

“Contemporary nursing is a unique occupation encompassing not only a highly specialised body of knowledge, but also the utilisation of complex technology, acquired skills and immeasurable actions.”

Nursing has developed from a vocation comprised of domestic duties, that was considered only suitable for women, to become recognised from the late 1970’s onwards as an increasingly complex occupation with a defined body of knowledge (Foley 1984). This change has been a shift from a position of subservience to the medical profession to one of increasing autonomy. In 1985, the State of NSW, in recognition of this increasing professionalism, shifted nursing training from the hospital into the university. In the period since then,

nursing has continued to develop and expand the knowledge base that underpins the profession, whilst maintaining a focus upon ensuring a high level of practical skill for clinicians (Pearson 2000).

In 1995 the community health nursing team at Ingleburn were operating as a generalist nursing team. That is, all nurses participated in all aspects of nursing work. Within this larger nursing team a small group of nurses were particularly interested in improving their practice.

“...we wanted to improve the practices and services of primary health nursing.”

Early Childhood Nurse, Group interview 16/11/00

This group of nurses was questioning what they were doing and why services were provided the way they were - did they make a difference to the health of the babies and families or were they busy without positive effect? Other research has identified motivation such as this has spurred nurses (Carr 2001; Clarke and Wilcockson 2002) and public sector employees to undertake change initiatives (Holzer and Callaghan 1998; Park 1999). Similarly, action that involves making the world a better place in some way has been shown to be highly motivational for innovation (Hage 1999; Cacioppe 2000).

There was a division within the community health nursing team whereby the nurses who wanted to improve the quality of their practice also wanted to specialise in early childhood nursing. Those nurses that opposed the change argued that the generalist model represented an efficient use of resources. Within the nursing team at the time there was no unified conceptualisation or standardised enactment of practice. A further problem the nurses faced was a lack of information deemed appropriate to consider changing the current arrangements. The only organisationally recognised information collected was the “occasions of service” statistics, that is, the number of clients seen within a

clinic. This statistic demonstrated the “opaqueness of practice” (Suchman 1987; Alvesson 2001; Contu and Willmott 2003), as one nurse explained.

“This number provided an idea of the ‘volume’ through a clinic but not the issues being addressed, the complexity of issues, the skill or capacity of the nurse to engage the family and/or even whether the physical environment of the clinic put the families off or encouraged them to attend.”

Families First Project Officer, Interview 16/10/01

The nurses continually argued that the clinical context and issues explored in a clinical encounter are important and necessary to understand the differences between different clinics and individual nurses. They argued that reducing their clinical practice to a single number, an “occasion of service” statistic, could not relay the complexity of practice.

The nurses who wanted to specialise in early childhood nursing engaged in conduct that can be described as “bottom-up entrepreneurship” (Sarbaugh-Thompson 1998). The term has been used to describe the process where the actors who provide the direct services of an organisation construct an innovation. Such conduct by an organisation’s frontline employees has been noted as a highly effective strategy by which to effect change (Beer, Eisenstat and Spector 1990; Nadler and Trushman 1999; Beer and Eisenstat 2000; Beer and Nohria 2000; O’Brien 2002).

Bottom-up entrepreneurship describes a process in which the innovation arises at the bottom and support from those working at or near the street level provides the momentum needed to propel the innovation forward. (Sarbaugh-Thompson 1998: 4)

The nurses in community health are “at the street level”, both literally and figuratively. Travelling into the community away from the physical buildings of the health service they provide many of their services within the homes of their

clients. As evidence of their status as actors “at the street level”, to understand their practice context further the nurses conducted a community survey and information stalls at the local shopping centre. They sought to understand the reasons why parents accessed, or why not they did not access, the nursing service. The survey revealed that mothers, and particularly those identified most ‘at risk’, reported that they did not access the service due to the location of the clinics in the local schools. Such differences, between services provided and the needs of users, have been noted to drive practice developments (Clarke and Wilcockson 2002).

The new information was now used by the nurses to argue for changes to the way services were currently being provided, that is, this new ‘fact’ was now utilised to “disorganise” (May and Ellis 2001) the current work arrangements. Using the information from their survey, the ‘specialist-quality’ nurses were able to align their ambitions with that of the Macarthur sector management, who wished to reduce the number of clinics due to their costs. After some negotiation the result was a merging of several school based clinics into a single shop-front, ‘Kidz clinic in Minto Mall’ staffed by one fulltime nurse and four others working part-time, with two conditions attached. Firstly, that the nurses seek funding from local businesses to support the running of the shop-front; despite the nurses’ efforts over the next year they were unable to locate such funding. The second condition was that the new service be evaluated, and in pursuing this requirement the IBIS was constructed. Through the IBIS the Kidz clinic could provide detailed data on the social and demographic information of their client group, as well as related information on the clinical practice of the nurses, individually and collectively. As a result of the IBIS the Macarthur sector management supported the continuation of the Kidz clinic service, despite the nurses having been unable to obtain funding from local businesses.

This completes the outline of the factors that initiated and shaped the change in community health nursing. A more detailed examination can be located in

appendix four. The exploration of the construction, mobilisation and refinement of the IBIS is the ongoing focus for this and the following chapter.

2.2 Collaborating with a discretionary or slack resource

Within the Macarthur sector there was a unit called the HORT that was working with clinicians to improve the health outcomes for the local community. The HORT was comprised of a director, two project officers and several administration assistants. At the time the HORT, based at a building known as the Old Bradley Centre, was collaborating with clinicians who were focused on children with asthma. They were educating parents about the condition of asthma and aiming to improve health professionals' responses to these children. The community health nurses knew of the HORT because they partly shared the same client group in the same geographical area. Unfortunately for the HORT a fire destroyed the Old Bradley Centre, along with their equipment and all records of their work. Understandably the HORT was devastated to have lost their work and were struggling with the idea of having to begin all over again. Fortunately for the HORT they had a flexibility in the focus of their work.

The overall brief of HORT was to assist clinicians in collecting structured, standardised information that could inform a health outcomes approach to service delivery. (Phung et al. 2001: 107)

The HORT were not required to pursue the asthma work they had previously been undertaking. They had the flexibility to work on projects of their choice so long as they were associated with improving health outcomes. In this way, the HORT is a “discretionary or slack” organisational resource (Cyert and March 1963) able to adjust to meet the requirements of a changing situation. The availability of organisational resources labelled “discretionary or slack” resources has been noted as important to achieve change and innovation (Senge et al. 1994; Judge, Fryxell and Dooley 1997). Similarly, resources devoted to research

and increasing the diversity of knowledge have positively contributed to organisational innovation (Hage 1999).

At this time the Kidz clinic nurses were searching for assistance to evaluate their new service and the HORT was considering their situation following their crisis. Each party's problem became the other's solution, and collaboration on the evaluation of the Kidz clinic service resulted. The evaluation project provided the HORT staff with a new direction and work purpose at a time when they were searching for one, and the nurses gained assistance in an endeavour associated with their practice ambitions. Such fortuitous collaboration around a compatible problem has previously been described by Cohen, March and Olsen (1972) as the "garbage can model of organisation".

The collaboration of the nurses and the HORT brought together a range of different skills and interests necessary for this evaluation task (Tyre and von Hippel 1997; Dougherty 2001; Spence et al. 2002).

Collaboration allows a considered approach where complimentary knowledge and skills can be brought to bear on a problem. (Connelly, Knight, Cunningham, Duggan and McClenahan 1999: 215)

The evaluation of the Kidz clinic required people possessing skills in different areas. In this case, the nurses brought the clinical skills and practice experience, and the HORT contributed the health outcomes skills and experience (Worren, Ruddle and Moore 1999). Previously such action has been described as "intra-organisational cooperation" (Smith, Carroll and Ashford 1995). With their different backgrounds, the collaboration constructed a "generative relationship" (Plsek and Wilson 2001) where the combination of their capabilities offered possibilities beyond what they could achieve alone. Alternatively, such collaboration has been described as "creative abrasion" (Leonard-Barton 1995) where the difference in

perspectives generates tension that can be harnessed to produce a productive outcome.

The director of the HORT described the critical aspects that coordinated their approach as group decision-making, commitment to improvement and the construction of knowledge; this approach has been succinctly summed up as “to improve and to involve” (Dickens and Watkins 1999). Lewin’s (1946, 1958) research has documented the importance of these processes for groups pursuing change, while other research with nurses has shown that such processes improve accountability (Schweikhart and Smith-Daniels 1996). That is, the involvement of clinicians in the defining and reviewing of their work improves the quality of that work.

To facilitate and unite the work of the two groups as one, the HORT staff advocated the use of their basic action-research methodology - plan, act, observe and reflect. They did not set out to follow or test a theoretical model, nor was this an academic or formal research project but a practical response to their particular situation (Park 1999). Alternatively, this methodology has been described as “participatory research” (Park 1999).

The action research participants begin with little knowledge in a specific situation and work collaboratively to observe, understand and ultimately change the situation while also reflecting on their own actions. The situation and environmental conditions lead the direction of the research. (Dickens and Watkins 1999: 130)

Where the collaboration of the nurses and HORT would lead them would be determined by what they learnt and the situation at the time (Lave 1988). In other words, the action would lead to understanding (Constant 1987; Orr 1990; Lave and Wenger 1991; Ford and Ogilvie 1996). The HORT and the nurses can be said to have engaged in an “emergent strategy” for learning (Eraut 2000), that is,

The intent and the learning activity were deliberative, but the recognition of learning opportunities was reactive. (Eraut 2000: 116)

The collaborative undertaking, facilitated by the HORT, shaped their collective learning and outcome (Berg 2001; Plsek and Wilson 2001), and simultaneously shaped the participants (Brown and Duguid 1991; Renshaw 1998).

Regardless of the label applied to actions of the HORT and the nurses, all the ideas mentioned above emphasise the importance of collaboration and participation to engage in learning and knowing, and thereby improve practice. In conjunction with the community of practice theory, the notion of collaboration (Connelly et al. 1999) is the idea that will be carried forward to explain the conduct associated with the technologisation of practice.

This concludes this section that has discussed the context that initiated the collaboration between the nurses and the HORT. This exploration has noted how the opportunity for change occurred through the confluence and accumulation of separate actions, without design or planning. The next section explores the collaborative process of standardising the conceptualisation and enactment of practice through the construction of the multi-dimensional practice resource, IBIS.

3. Constructing a multi-dimensional resource

This section describes the initial aspect of the technologisation of practice. That is, the section details the increasing standardisation of the conceptualisation and enactment of practice through the construction of a multi-dimensional resource, the IBIS, within a community of practice. Empirically the description continues by focusing upon the collaborative activities of the nurses in the Kidz clinic and the HORT. There are four parts to this section. Firstly, the emergence of the Kidz

clinic nursing community through the process of “learning-in-working” (Brown and Duguid 1991, 1998) is described. Secondly, the construction of a prototype (Mascitelli 2000; Dougherty 2001) by this community is discussed. The third part explains how this community transforms the prototype into an artefact within a practice (Wenger 1998a) through enacting a range of standardised technologies (Hill 1991; O’Malley 1996; Rose 1999). The final part reviews the IBIS as an immutable mobile (Latour 1986) and discusses how the IBIS is a multi-dimensional resource that has constructed a practice community of relative autonomy within tight control.

3.1 Learning-in-working: The emergence of a community of practice

Calling on the ideas of Dagoguet (1969, 1973), Latour (1986: 14) states:

..no scientific discipline exists without first inventing a visual and written language which allows it to break with its confusing past.

For the HORT and nurses in the Kidz clinic this was exactly the challenge that they faced. That is, to be able to evaluate the work of the Kidz clinic they needed to break with the “confusing past” that was early childhood nursing in community health, characterised by a lack of structure and limited common understanding and actions. The nurses and the HORT needed to “invent a visual and written language” that would unite the nurses in a common practice; they needed a meta-language for practice, a standardised way of conceptualising, discussing and enacting practice.

Along with the HORT, all the nurses engaged in the task of considering how to evaluate the service. This participation was an important action that contributed to the integration of the mental and manual dimensions of the work (Sewell 1998). Together they began by reviewing what the current clinical practice in early childhood entailed. In doing so they engaged in a process of “learning-in-

working” (Brown and Duguid 1991, 1998), or alternatively, a “sense making” activity (Daft and Weick 1984; Weick 1995; Shariq 1998), to collectively learn about the practice of early childhood nursing. The HORT and nurses reviewed the documented practice of the nurses, not an abstract description of work tasks as contained in a job description; they focused on the non-canonical, not the canonical practice (Brown and Duguid 1991).

Together the nurses and HORT did two things simultaneously - they met as a group to talk about the work of early childhood nursing and they constructed a written understanding of practice. Through this unified action the HORT and the nurses were undertaking a “people to documents approach” (Hansen, Nohria and Tierney 1999), converting experience into a document that can be stored, moved, shared and reused (Iedema 2001, 2003). That is, their collaboration enabled their collective experience to be reified into an artefact owned by the community and through the process of constructing the artefact, simultaneously the community is realised.

Together they examined a random selection of the early childhood files, the “Well Baby Medical Records”. They selected files that were both “closed”, the client’s were no longer attending the service, and “open”, the client’s continued to attend the service, examining the documented record of the nursing practice. A nurse involved documented their activities in an unpublished paper as follows:

Initially 150 Well Baby Clinic Medical Records were examined and the contents examined for common themes. These records consisted of ‘Intake form’ (demographic data), ‘Paediatric baseline form’ (standardised documentation tool that documented physical health of mother and baby), and ‘Progress Notes’ (documentation of specific problems, interventions discussed at each visit. This documentation differed on the seniority of the nurse, skill level, and documentation style). (Belanszky 1999: 5)

Through this action, the nurses and the HORT constructed a list of common themes that are covered during a mother-baby visit; that is, they engaged in the “resemiotisation” of their work (Iedema 2001, 2003). This list revealed that the nursing practice covered a broad range of physical issues, including whether the baby had a rash, the dressed and undressed weight, the head circumference, the baby’s length, and the feeding, sleeping and changing routines. The list demonstrated that the nurses were focused on the physical needs and development of the baby. The nurse and mother may have discussed other issues but the documentation revealed the priority was the physical health details. One of the nurses who undertook this task recalled the files were “interesting reading” as much for what was documented as for what was not documented, as well as how detailed, or brief, the documentation was and how ultimately the file reflected the “character” of the individual nurse practitioner. The collaborative actions of the nurses and the HORT here are analogous to those of radiographers, researchers and clinicians, as reported in a study by Karasti (2001), where they were attempting to understand the work practices associated with x-ray services.

With their list of common themes the HORT and nurses reflected upon their practice, “sharing insights”, and in doing so they began to enact a community of practice through thinking and speaking about work as shared and share-able concerns.

Nothing conveys what they (communities of practice) are about better than the experience of sharing insights in a regular forum, supported by a coordinator and/or facilitator. (McDermott 1999a: 34)

The nurses and the HORT collaborative process was important, as the construction and iterative enactment of collective meaning has been shown to construct a community of practice (Wenger 1998a; Fleck 1979 in Tuomi 2000; Armson, Ison, Short, Ramage and Reynolds 2001). Participation in this type of

collaborative activity has been shown to enhance knowledge generation and transfer (Constant 1987; Orr 1990; Lave and Wenger 1991; Nonaka 1994; Ford and Ogilvie 1996; Raelin 1997; Cohen 1998; Richter 1998; Ruggles 1998; Shariq 1998; Karasti 2001; Tsoukas and Vladimirou 2001). They met as a group to discuss and reflect upon the common themes, with the nurses continually drawing upon their practical experiences and capacity to “narrate” their clinical practice (Brown and Duguid 1991). They enriched their understanding of the themes through the sharing of their “war stories” (Zuboff 1988; Orr 1990, 1996; Brown and Duguid 1991, 2000; Lave and Wenger 1991; Sach 1995; Wenger 1998a) and in doing so constructed an increasingly mutual understanding of practice. Such collaborative face-to-face interaction has been identified as an important strategy for innovation work as the interaction allows the sharing of knowledge (Nonaka and Takeuchi 1995; Ford and Ogilvie 1996; Choo 1998; Cohen 1998; Ruggles 1998; Mascitelli 2000; Sørensen and Lundh-Snis 2001; Styhre 2003).

The nurses and the HORT now had to decide how to further their increasingly similar conceptualisation of practice, as reflected in their list of common themes and communal stories. From their ongoing collaborative discussion, the proposal emerged to construct a new nursing artefact. The idea was to translate the list of themes into questions to be used by all the nurses in their clinical practice and link the questions into a computer database. The nurses considered having a common list of clinical practice questions a simple but effective strategy by which to standardise early childhood practice in the Kidz clinic. Linking the artefact into a computer database would allow information to be collected, collated and reviewed which meant they could evaluate the Kidz clinic.

In this way, the evaluation of Kidz clinic was realised as the knowing (Blackler 1995) of the HORT and nurses developed. As the following comment from a nurse explains, their experience of this process was extremely positive and also as important as the tangible outcome, the IBIS.

“Being involved in the construction process (of IBIS) made me/us think about what we were doing.”

Early childhood nurse, Group interview 16/11/00

Having the time and space to talk and reflect with their colleagues was central to achieving the successful outcome. Through collaborating to evaluate the Kidz clinic the nurses and the HORT constructed their community of practice, and simultaneously this community of practice was necessary for the evaluation to occur. Competency became not just the practice of nursing but the capacity to reflect, articulate, conceptualise and discuss the practice of their nursing community. Iedema (2003) has noted the rising necessity of workers to engage in such conducts when enacting change. Further, the collaboration, and emerging competency, is the beginning of what Porter (1995) has described as “disciplinary objectivity”.

Here consensus is sought and obtained between equals, who comport themselves adequately, are experienced, and are trusted by those requiring their expertise. Disciplinary objectivity is associated with the valuation of tacit knowledge, with the artful application of insight that comes only with learned experience among peers. (Timmermans and Berg 2003: 138)

Through this ongoing process of collaborative participation and reflection, the nurses and HORT developed a shared and increasingly coordinated knowing, generating ongoing communal conversations and co-produced written documents. The reflections turned into documents became the reified resources of the community used in their formal meetings and informal interactions. In the community learning was the intertwined activities of enacting their practice and explicitly negotiating this practice with one another; the learning was a social activity (Orr 1990; Brown and Duguid 1991; Lave and Wenger 1991; Richter 1998; Wenger 1998a; Park 1999), and together the nurses began to enact an individual-community practice duality (Wenger 1998a). As noted previously the idea of a duality is used here to consider two items that are not defined as

opposites of each other, but rather the understanding is that they are complementary, that they take place together and that they require and enable each other (Giddens 1984).

Contrast this with Melia's (1987) study, in Harrison (1994), which relates a group of nurses without the time or space to think about their practice. The constant pressure to complete work led Melia's nurses to focus on the repetitive undertaking of physical tasks rather than thinking about their practice (Davenport and Prusak 1997); whereas other research has shown that individuals and teams who reflect upon their practice improve their performance (Schön 1983; Gergen 1985; Senge 1990; King and Rowe 1999; Maudsley and Strivens 2000; Bennett 2001). Similarly, there has been research with nurses that supports the finding that reflection improves practice (Clarke, James and Kelly 1996; Street 1997; Higgs and Anderson 2001; Higgs, Titchen and Neville 2001; Richardson 2001), and the case described here further supports this finding.

3.2 The community constructs a prototype

Reflecting on their common themes the nurses and the HORT expanded their collective knowing by drawing upon ideas from nursing and community medicine. They collaboratively considered questions such as: What should we be doing? What else should we know about to provide a good service? What other public health issues are important? They consulted with other professionals, including the Area Community Nursing Advisor and Area Director of Community Health, examined the Paediatric Nursing Manual as a guide to appropriate clinical practice, read journal articles, and attended professional forums. In this way, the distant or global ideas reinforced the nurses' present understanding of practice and in doing so they began to enact a local-global practice duality. The result of this reflection was a furthering of their shared collective knowing; the nurses' collaboration was constructing "professional craft knowledge" (Titchen 2001;

Titchen and Ersser 2001a, 2001b) and through this ongoing process the nurses' knowing and associated clinical practice elaborated to include others' knowledge and discourses, and became increasingly unified.

The HORT and the nurses continued to meet to collectively transform their themes into clinical questions in a single document. A paper prototype (Mascitelli 2000; Dougherty 2001) of a new nursing artefact was constructed that had two interrelated parts – a questionnaire and data dictionary. The first part is a paper form that lists the clinical questions and the second part is a paper reference document that provides the collective experience of how to interpret answers to the clinical questions to ensure a standardised response. In Iedema's (2001, 2003) terms this is again the process of "resemiotisation", that is the transformation of meanings from one discourse or 'semiotic' into another. The practice learning and knowing of the community is bound into, physically and symbolically, and supported by, the prototype. The action of constructing the prototype is the expansion of a socially negotiated order into the practice environment, in so far that the prototype structures, formalises and recursively standardises the practice of the nurses (Hill 1991; Wenger 1998a; Frissen 1999; Brown and Duguid 2000; Timmermans and Berg 2003).

The construction of a prototype has been shown to facilitate the innovation process through enabling the sharing of tacit knowledge (Gagliardi 1997; Leonard and Sensiper 1998; Shariq 1998; Mascitelli 2000; Dougherty 2001).

The key concept here is that extensive use of models and prototypes throughout the design process provides rich opportunities for individuals to take a physically active approach to learning and experimentation. (Mascitelli 2000: 187)

The paper prototype allows the nurses to take a "physically active approach to learning and experimentation". Being paper the prototype can be looked at, held, reconsidered, written on, crumpled, passed around, dropped and picked up,

copied, distributed, recopied and changed as necessary. The emerging collective knowing and learning becomes enacted through the nurses practising with the prototype form and data dictionary, and reflecting upon their practice with the HORT. The paper prototype is an “artefact” (Wenger 1998a) that is collectively constructed by and simultaneously unites the HORT and nurses into a community of practice. This is because modes of participation arise around and ground the artefact (Wenger 1998a). For the nurses and the HORT learning, working and innovating are the one and the same activity, and similar to the technicians in Brown and Duguid’s (1991) research, the knowing is distributed across the community necessitating that these activities are continually enacted collaboratively.

The prototype was being constructed to fit with the clinical and organisational context of the nurses (Rebentisch and Ferritti 1995; Miles and Snow 1978 in Swan, Newell and Robertson 1999; Berg, Langenberg, Berg and Kwakkernaat 1998; Berg 1999, 2001). That is, in the development of the questionnaire the HORT paid careful attention to the physical and technical format, while the nurses focused on the clinical details and use of the form in practice, with each informing the work of the other. Similar cooperative conduct is noted between system designers and clinicians in the research by Karasti (2001) and approaching construction in this way has been described as “a matter of co-evolving work and technology” (Buscher, Gill, Mogensen and Shapiro 2001). Alternatively, there are a number of other similar ideas in the literature to describe the construction of the prototype. These include “examining the workflow environment” (Sorge 1989 in Swan, Newell and Robertson 1999), “using a socio-technical approach” (Berg 1999, 2001) or more recently “combining the system and human strategies for sharing knowledge” (Choi and Lee 2002). Whatever the label applied, the point is that for the successful development and integration of new systems or products the technical and social dimensions need to be considered simultaneously and as being interdependent (Berg et al. 1998; Berg 1999, 2001).

The nurses drew upon their collective experience and by taking one theme at a time, they transformed the themes into questions and answers. They discussed and debated the wording until agreement was reached that the question-answers reflected their similar conception of practice. The questions were collated into a prototype form and the answers compiled into a document called the data-dictionary. The resulting prototype was constructed to allow the questions to be codified in a format that enabled scanning into a computer and thus the creation of a clinical database. Using the technical systems FLIPSOMAR and SCANBOOK for form design and database design, and the SCANMARK 2500 device for scanning, the integrated form and database was established. The rationale for constructing the prototype in this manner was recorded in an organisational report.

One aspect of this development was that technically it was a robust, flexible and low cost solution. Because it used scannable medical records based on technology using Optic Mark Recognition and did not require large numbers of data entry operators, it was likely that it could be sustained despite staffing changes and budget crises. Electronic capture of large volumes of clinical information in real time was relatively easy and reliable. (SWSAHS Maternal and Infant Network (MINET) Report, 1999-2000: 9)

The ease of data collection and entry, via the paper form - a common piece of technology in the nurses' environment, is combined with the power of computing technology, thereby simplifying aggregation, ordering and retrieval (Zuboff 1988; Berg 2001; Hill 1991; Hill, Horne and Carter 1991). In this situation the information technology chosen, the form-scanning option, offered no disruption to the clinical practice of the nurses. Paper form filling was a normal part of the nurses' work and an activity their clients expected to encounter, meaning that the technology remained in the background and did not disrupt this collaborative clinical practice (Button and Harper 1993; Berg et al 1998; Buscher et al. 2001; Berg 2001). This strategy effectively removed the significant problem, noted in

other research with nurses, of having to gain acceptance for computer based documentation systems that change established clinical practice (Goossen, Epping, Dassen, Hasman and van den Heuvel 1997; Ammenwerth, Kutscha, Kutscha, Mahler, Eichstadter and Haux 2001b).

The design property of the forms that allows them to be collated and combined into a computer database made the system being constructed a source of power.

It is hard to overestimate the power that is gained by concentrating files written in a homogeneous and combinable form. (Latour 1986: 28)

At a further point in time the power of this system would be used to advocate the expanded use of the system right across the AHS. At present though, the sole consideration was that the technology fitted within their economic context, now and for the foreseeable future (Buscher et al. 2001). The nurses and HORT were aware that the longer-term viability of the system they were constructing had to operate within the increasing budget restrictions of the AHS. In this way developing a low cost reliable system was a strategy to thereby maintain alignment (Wenger 1998a) between the local community of practice and broader organisational context, both now and into the future (Ammenwerth et al. 2001b; Buscher et al. 2001; McLaughlin and Mitra 2001).

3.3 IBIS - A new nursing artefact and associated technology

Following the HORT's action-research methodology the nurses began to use the prototype in their practice context of the Kidz clinic; this action is the ongoing process of bottom-up entrepreneurship. They would conduct their clinical assessments, with the prototype providing the topics to interview the mothers about the health and development of their children. With the HORT they would then discuss and reflect on their experience, and in doing so incrementally adapt

the questionnaire (overall format and specific questions), data dictionary, database and their practice conduct.

Small scale local nature of the action meant that it could be adapted and developed incrementally. (Sarbaugh-Thompson 1998: 13)

This ongoing process involving the incremental adjustment of the prototype and use of the form in practice was not a trivial exercise by any means. Constantly bridging the needs of the patient or work situation and a tool's functionality is a highly skilled activity, one that has been labelled "articulation-work" (Star 1989). The incremental and improvisational nature of this activity has been noted by other research.

A change process, especially one where information technology plays a central role, seems to be an improvisational endeavour, one where action is planned as it unfolds, drawing on available resources. (Cunha and Cunha 2003: 182)

The nurses' immediate experience from practice with the prototype was the "available resource" that was drawn on to introduce further incremental changes. The nurses and the HORT reflected upon practice, leading to changes of the prototype and practice conduct. For example, the nurses used their collective experience to adjust the order of questions to produce a better 'flow' in the clinical interview. Questions were grouped together and ordered to make the prototype 'feel' easier to use. In this way the collective practice knowing informed and shaped the technologisation process (Berg et al. 1998; Berg 1999, 2001), and the prototype was transformed into the new nursing artefact the IBIS through the nurses enacting a new technology (Hill 1991; O'Malley 1996; Rose 1999).

Here a technology seems to refer to an assembly of forms of knowledge with a variety of mechanical devices and an assortment of little techniques orientated to produce certain practical outcomes. (Rose 1999: 52)

The nurses assembled their collective knowing into the prototype, an artefact that now disciplines their practice. Previously without the prototype to complete the nurses' clinical practice was less defined and less explicit. Now they had an artefact that standardised their clinical practice.

“if you understand how it was developed, you know it reflected what the nurses were doing it was, you know we were using it as a proforma so that we could actually standardise clinical practice.”

Families First project Officer, Interview 16/10/01

The nurses now had a proforma for practice. Being a paper form the IBIS artefact was duplicated and transported to the clinic providing a structure and list of clinical issues that became consistently explored by all nurses with all families. Through their communal reflection process, the nurses shared and appropriated similar ways of using the artefact in practice; for example, they discussed how best to ask questions without appearing to be interrogating the mother. That is, how to engage and manage the interview process so that the mother feels comfortable and is willing to talk. To this end, the nurses shared their ideas and actions, and in doing so adopted similar conducts in practice. As a result, the nurses came to know that their colleagues at other times are engaging in similar actions, words and interactions with families. This also explains why nurses can now fill in for one another in their clinics in case of absence and the families experience only a minimal disruption. The practical outcome was that as a community they now collectively conceptualised and then enacted an increasingly coordinated and structured, and thus standardised practice.

Improvising as they went, after several cycles of trial-reflection-adjustment, the nurses and HORT reached agreement on the final questions-dictionary, the overall format and the conduct of clinical practice. In this way, the prototype was transformed into a new early childhood nursing artefact through enacting a new technology.

The artefact was comprised of two parts, a questionnaire for clinical practice and the complementary reference document, the data-dictionary. The clinical practice questionnaire is a six-page document comprising a four-page “initial visit” form and two-page “follow up” form. The nurses explained that the clinical practice questionnaire was purely descriptive in format, and designed to be “a very practical, clinical practice based form”. The end result was an integrated clinical practice questionnaire and computer database named the Ingleburn Baby Information System, which became abbreviated to “IBIS”. The name reflected the location of construction, the focus of the clinical work and the computerised capability of the system. The name IBIS became used to simultaneously represent both the nursing clinical practice questionnaire and the database, individually and collectively. The IBIS artefact, version one, was completed in January 1996; see appendix five for a copy of the IBIS and other forms utilised within early childhood nursing. That the IBIS was constructed at a periphery of the AHS, geographically and professionally, is not to be regarded as unusual, as other research has suggested that the periphery learns faster than the core (Nicolini and Meznar 1995).

In developing the IBIS the nurses had succeeded in constructing a “new visual and written language that broke with their confusing past”. The IBIS became a discourse that united and represented this nursing community. To continue with Nicolas Rose:

Every technology also requires the inculcation of a form of life, the reshaping of various roles for humans, the little body techniques required to use the devices, new inscription practices, the mental techniques required to think in terms of certain practices of communication. (Rose 1999: 52)

The nurses collectively developed similar “little body techniques”, “mental techniques” and “practices of communication” to realise the standardised use the IBIS artefact in clinical practice and to be able to effectively discuss their practice with one another. A further example will highlight the point. The nurses enacted a new “little bodily technique” called the practice of ‘bubbling’. This practice refers to the nurses’ actions and discussion about how best to complete the IBIS artefact, which is a computerised form; the nurses discussed the merits of using a circular or side-to-side writing motion - ‘bubbling’ - to fill in the answers on the form. To a nurse not involved with the Kidz clinic this conversation is meaningless but to those who belong to this community of practice engaging in this discussion is an important display of competency. How the nurses were conceptualising practice, enacting practice and communicating (talking and writing) about practice became increasingly unified through the ‘IBIS technology’.

To summarise, constructing and using the IBIS contributed to standardising the conception and enactment of practice in the Kidz clinic; this action is the initial aspect of the technologisation of practice.

3.4 IBIS - An immutable mobile

As well as considering the IBIS as an artefact-technology, as has been undertaken in the previous section, the IBIS can also be regarded as an immutable mobile (Latour 1986). Recall that Latour (1986) has defined immutable mobiles as objects having the properties of being mobile, immutable, presentable, readable and combinable with one another. As an individual form,

the IBIS artefact can be transported to any place without changing the written presentation of early childhood nursing. The individual form can then be returned from a distant location, retaining the information collected and through the scanning process the information can be collated (along with other similar forms) into a computer database. Conceptualising the IBIS in this way is to understand IBIS as an immutable mobile.

The immutable mobile IBIS is a technology that can generate new information about the work of the nurses.

The same technology simultaneously generates information about the underlying productive and administrative processes through which an organisation accomplishes its work. (Zuboff 1988: 9)

Capturing information from all the separate clinical encounters, the IBIS can “generate information” about the work of individual nurses and their collective work in the Kidz clinic. Burnham (1983) has described such activities as the “migration of information from the home to the organisation”, and this activity also has been described as the “textualisation of behaviour” (Zuboff 1988). The immutable mobile IBIS offered a new source of information about the nurses’ clinical practice, thereby enabling them to evaluate their service.

It is because all these inscriptions can be superimposed, reshuffled, recombined and summarised, and that totally new phenomena emerge, hidden from the other people from whom all these inscriptions have been exacted. (Latour 1986: 32)

With the IBIS “new phenomena emerge”, to challenge the nurses’ subjective experience. That is, the IBIS affords information about early childhood nursing that has the power to construct new, or “meta”, information from the daily routine work of the nurses. This is because the IBIS is a technology that “time-space distanciates” (Giddens 1984) the practice of early childhood nursing from the

individual presentation to the collective practice of the Kidz clinic due to the abstract nature of the information that is constructed. This capacity enables the nurses to enact a subjective-objective practice duality (Schultze 2000; Timmermans and Berg 2003). That is, the IBIS expanded, and in doing so transformed, the work of the nurses from subjective experience into a clinical questionnaire and resulting statistics; relying upon rules, guidelines and statistics has been described by Porter (1995) as “mechanical objectivity”. The rules, guidelines and statistics provided the nurses with standards beyond their own immediate experience, or alternatively made the nurses’ practice appear increasingly objective and authoritative.

For the first time the IBIS offered a way of comprehending and visualising the work of the early childhood nurses in a range of questions and numbers that were deemed legitimate by the nurses themselves, and other professionals, while not detracting from the nurses’ subjective experience. In abstract terms, the IBIS became a meta-language and the unique discourse associated with the Kidz clinic. Significantly, the information was unique for early childhood nursing for the Macarthur sector and indeed the whole AHS at that time. Further still, IBIS practice offered “synergy” (Berg 2001), integrating primary work process, patient care, with secondary work process, organising and managing actions (Aungles and Parker 1992); alternatively in nursing terminology, the IBIS offered a system that integrated care production work with care management work (Schweikhart and Smith-Daniels 1996).

In constructing the IBIS the nurses collaborated in their own management and alignment, rather than control being imposed by management. To rephrase, with the IBIS control without appearing to control is achieved (Poster 1990 in Sewell 1998). The IBIS artefact is a tangible reminder to the nurse that she is a member of a community in which her practices are shaped by and visible to her colleagues. Similarly, the IBIS technology is a bodily reminder to the nurses that they belong to a community of practice. Having the IBIS form to complete

disciplines the practice of the nurses explicitly and belonging to the community disciplines the nurses unobtrusively (Barker 1993; Sewell 1998). Then as a “immutable mobile” the IBIS has made the work of the nurses comprehensible and visible to themselves, and other organisational members. The IBIS provided more information about the clinical practice of early childhood nursing than ever before.

The information from the IBIS could be transported to other places and this increased the transparency of practice. This visibility and transparency opened the practice in the Kidz clinic to increased scrutiny by those within, and potentially outside, the clinic as never before. In doing so the IBIS expands the nurses’ legitimacy and authority from an individual orientation to become grounded in their practice community (Sewell 1998). Similarly to the insurance physicians described by Timmermans and Berg (2003), the IBIS united disciplinary objectivity and mechanical objectivity (Porter 1995) for the nurses. That is, the nurses and HORT have enacted a unique ‘IBIS community of practice’ where their collective reflection led to the construction of an artefact and associated techniques that enable the circulation of knowledge (Gagliardi 1997; Tuomi 2000), and the construction and enactment of a normative gaze that nurses use to scrutinise the practice of their community. Within this context the nurses transformed autonomy into a collaborative accomplishment (Sewell 1998), constructing a practice community of relative autonomy with mutual accountability to a collectively negotiated technology (Friedman 1977 in Sewell 1998).

To summarise, the first aspect of the technologisation of practice involves standardising the conception and enactment of practice through constructing a multi-dimensional practice resource within a community of practice. The multi-dimensional resource is the IBIS. The IBIS is shown to be a nursing artefact within a practice, a technology, and an immutable mobile that simultaneously empowers and disciplines the nursing community of practice. These three

dimensions are simultaneously represented, embodied, interwoven and embedded in the IBIS.

4. Conclusion

This chapter has discussed how the construction of the IBIS reconstituted the practice of early childhood nursing, enabling and requiring intensified collaborative relationships and new practices.

Undertaking the activity of “learning-in-working” (Brown and Duguid 1991, 1998) the early childhood nurses of the Kidz clinic and the HORT constructed a new “visual and written language” (Latour 1986) that is the IBIS. Through the technologisation of practice early childhood nursing has come to be increasingly represented by the IBIS and has become progressively more conceptualised, prescribed and enacted in standardised ways (Timmermans and Berg 2003). The technologisation has revealed the IBIS to be a multi-dimensional resource: the IBIS is an artefact within a practice, a technology and an immutable mobile. The IBIS is an artefact that allows the circulation of knowledge (Gagliardi 1997; Tuomi 2000) and is a discourse that unites and realises the IBIS community of practice in the Kidz clinic. In exploring the technologisation of practice the IBIS is revealed to be a resource that empowers the nurses while simultaneously controlling them. Relative autonomy with collective accountability has been the outcome.

This technologisation has resulted in the enactment of three practice dualities – individual-communal, subjective-objective and local-global – that together unite “disciplinary and mechanical objectivity” (Porter 1995). That is, autonomy and competency are shown to have become simultaneously an individual-communal duality, whereby the nurses actively participate in their own disciplining and control (Poster 1990 in Sewell 1998; Barker 1993; Sewell 1998; Johnson 2001). The situatedness of practice is shown to necessitate a subjectivity-objectivity

duality, whereby individual and communal experience is drawn upon to see through the otherwise opaqueness of statistics and information (Suchman 1987; Alvesson 2001; Contu and Willmott 2003). In addition, the nurses enacted a local-global duality, whereby local understandings are informed and shaped by distant issues (Sewell 1998).

This chapter has explored the initial aspect of the technologisation of practice, which involves standardising the conception and enactment of practice through constructing a multi-dimensional practice resource within a community of practice. The next chapter focuses on detailing the second aspect of the technologisation of practice; that is, how the mobilisation and refinement of the IBIS practice realises extended relationships of accountability between the community health nurses in different locations and also with other (health and welfare) professionals. These relationships are through the enactment of the IBIS practice network and the MINET program respectively.

Chapter Six: Extended relationships of accountability

“..the blame kind of dialogue, that happens between hospital and community health at the moment, umm it’s really not about identifying the issue and looking at it in a much more umm, objective way so yea I think that.. that yea there’s a whole lot of reasons why that is so but I think IBIS contributes to, to making that discussion broader, taking some of those blames umm things out, and just, just the fact that people can start to sit down around the table together, it goes back to what we were saying before it legitimises that you can sit down around the table and talk..”

Families First Project Officer, Interview 16/10/01

Focusing on the level of communities of practice is not to glorify the local, but to see these processes – negotiation of meaning, learning, the development of practices, and the formation of identities and social configurations - as involving complex interactions between the local and the global. (Wenger 1998a: 133)

1. Introduction

This chapter explores the second aspect of the technologisation of practice, that is, the enactment of extended relationships of accountability through the mobilisation and refinement of the multidimensional practice resource. The first aspect of the technologisation of practice, standardising the conception and enactment of practice through constructing a multi-dimensional practice resource within a community of practice, was explored in the previous chapter.

This chapter examines how the mobilisation and refinement of practice, as represented by the IBIS, has reconstituted the practice of early childhood nursing realising extended relationships of accountability. The notion of extended relationships of accountability refers to the fact that practice becomes interdependent between professionals or services in different locations. That is, the work undertaken in one place impacts upon and shapes the enactment of work in another place. Such relationships are made possible by immutable mobiles, such as the IBIS, that enable practice to become visible and transportable between different locations. The extended relationships of accountability have been firstly between the community health nurses across the AHS, and secondly between the community health nurses and other professionals.

This chapter has two parts. Firstly, the chapter begins by examining how the mobilisation of IBIS practice has constructed extended relationships of accountability between the community health nurses in different locations. This extended relationship of accountability became enacted into and through the 'IBIS practice network'. The second part then discusses how ongoing refinement of practice, or "continuous prototyping" (Mascitelli 2000), by the IBIS-nurses and the HORT resulted in extended relationships of accountability with other health professionals. In other words, early childhood nursing services became integrated into an extended service network - a 'maternal and infant continuum of care' called the MINET program.

2. IBIS changes relationships in early childhood nursing

The following discussion will show how the simultaneous mobilisation of early childhood practice, as represented by the IBIS, engaged the community health nurses into extended relationships of accountability across different locations. Firstly, the mobilisation of the IBIS, which realised other 'IBIS communities' is

discussed. Secondly the construction of an 'IBIS practice network' is explored, which leads into the third part that examines the "continuous prototyping" (Mascitelli 2000) that reinforced the network.

2.1 Realising other IBIS communities of practice

Across the AHS, the community health nurses put up three reasons for their historical lack of collaboration and the differences in their early childhood nursing practices. The reasons are the geographical distance between clinics, the different suburb characteristics and the different locally produced interpretations of practice. To these three reasons was added a fourth, the increased complexity of practice as represented by the IBIS artefact. For those nurses associated with the Kidz clinic, practice with the IBIS was transparent whereas to nurses not connected with the clinic, the 'IBIS practice' of the clinic remained opaque (Berg 1999). To put this differently, the IBIS technology constructed a boundary between those nurses participating in the Kidz clinic and those who were not.

Technology simultaneously associates and dissociates. (Law 1987: 128)

The community health nurses working in the Kidz clinic became known to their colleagues as 'IBIS-nurses', a label that identified them with the unique technology and practice of that specific community.

To overcome this dissociation and construct an association for other nurses with IBIS practice the task for the IBIS-nurses became, as expressed by MacKenzie (1987), to "develop the need for their new artefact"; that is, to show how the IBIS could benefit the early childhood nursing practice of their colleagues in other locations. Only if other community health nurses identified with the practice of the IBIS-nurses, would they consider adopting such practice in other places.

This re-application (of knowledge and practice) occurs only if similarities in the community of practice can be identified, seen as appropriate and regarded as worth expending effort upon. (Billett 1996: 269)

To re-apply the IBIS knowledge and practice, the HORT and IBIS-nurses set out to identify the similarities of IBIS practice with early childhood nursing practice in other places, and to argue the benefits the IBIS would bring to their colleagues. To identify similarities across the clinical sites the HORT took care to “manage the transition” (Bridges 1991) with the IBIS by arranging ‘preparatory sessions’ at the new nursing sites. The preparatory sessions involved the HORT and the IBIS-nurses visiting other nursing clinics in community health, firstly in the Macarthur sector and then later across the AHS, arguing that the IBIS was “worth expending effort upon”. In my terms, the HORT and IBIS-nurses were initiating extended relationships of accountability with their colleagues in distant locations.

In the preparatory sessions the HORT and IBIS-nurses engaged the participation of other nurses by distributing and demonstrating the IBIS form and data dictionary. Being promoted as an artefact constructed within the AHS from the clinical practice experience of community health nurses, the IBIS artefact was mobilised to share knowledge (Gagliardi 1997; Tuomi 2000) and construct common ground (Bechky 2003). Together they explained the construction of the IBIS, the benefits of the IBIS, practice with the artefact and the scanning procedure. The approach was based on the perspective that by having the nursing clinicians introduce and explain the IBIS they could answer the questions and address any fears of their nursing colleagues, and, in doing so, demonstrate the similarities between their respective practices. The IBIS-nurses explained their practice with the IBIS through the “narration” (Brown and Duguid 1991) of their “war stories” (Zubboff 1988; Orr 1990, 1996; Brown and Duguid 1991, 2000; Lave and Wenger 1991; Sach 1995; Wenger 1998a). As noted in the previous chapter, the narration of stories by members of a community is a highly effective

means of conveying the rich details of practice, thereby increasing the knowing and strengthening the bonds between the members.

In the preparatory sessions the HORT and IBIS-nurses explained the IBIS to their colleagues as a valuable system for early childhood nursing.

“IBIS is valuable due to having clinical ownership, due to the process of construction, and being able to provide relevant clinical and service information in a timely manner, that is, real time data.”

HORT Director, Informal Interview 10/06/01

The HORT and IBIS-nurses discussed the properties of the IBIS - the capacity to generate new information about clinical practice, the client focus, the ownership of the system by the clinicians and a common structure for clinical practice – that they believed made the expanded use of the IBIS beneficial for the nurses, their managers and the organisation. They argued that the common barriers put forward to comparing practice – distance, different suburbs characteristics and locally-produced interpretations of practice – were surmountable through the use of the IBIS artefact. The power of the IBIS - that the IBIS could generate information that was consistent from clinic to clinic, and more than a single ‘occasion of care’ statistic, thereby allowing a greater comparison of work and workloads – was a key point made. In my terms, they argued that the IBIS is a technology that standardises the community health nurses’ conception and enactment of early childhood practice (Timmermans and Berg 2003), and an immutable mobile that makes practice increasingly visible and transparent (Suchman 1987; Alvesson 2001; Contu and Willmott 2003).

This face-to-face interaction between the HORT, IBIS-nurses and other nurses furthered communication and trust, and led to the acceptance and the agreed use of the IBIS; discussion over documents in this way has been shown to be effective to this end (Spender 1996; Wenger 1998a; Sørensen and Lundh-Snis

2001; Malone 2002). The HORT then addressed the practical tasks associated with the implementation and training for the IBIS, for example, issues such as locating a suitable place for the storage of the forms, establishing a scanning routine and the task of completing the forms, an action you will recall from the previous chapter the IBIS-nurses called “bubbling”.

Through the preparatory sessions the HORT and IBIS-nurses were sharing their ‘practice knowledge’ with their colleagues. Alternatively, in the language of Wenger (1998a), the IBIS-nurses would act as “brokers” undertaking “delegations” to their colleagues conducting a “boundary practice” with the “boundary object”, the IBIS. In this way, the preparatory sessions were an important strategy to demonstrate the similarities between the Kidz clinic and the new nursing group they were working with, and in doing so showed the “need for the new artefact” (MacKenzie 1987). Hutchins (1995) has described this activity as “propagation work”, the re-embedding of knowing in similar contexts. Similar strategies have been used with success in other locations, for example, to facilitate the introduction of clinical supervision for nurses in a health service in England (Spence et al. 2002); and also a global company when introducing a new business system conducted similar sessions to enlist the collaboration of staff (Swan, Newell, Scarbrough and Hislop 1999a).

The initial appearance of the IBIS artefact to the community health nurses suggested that the IBIS was simply another form to be completed in the clinical encounter. However, the IBIS-nurses explained that the activity of using the form was not so straightforward for two interrelated reasons. Firstly, IBIS practice involved an increased number and breadth of topics to be covered in the clinical encounter. Secondly, IBIS practice therefore requires interpretation and negotiation between the nurse and mother. Developing and maintaining a clinical relationship requires very good interviewing and counselling skills on the part of the nurse, and an expanded clinical knowledge base. This requirement engaged the nurse and mother in a more intensive clinical relationship than previously

experienced by many nurses in early childhood work. So, although the clinical nursing topics had been documented and made explicit, the conduct of practice had in fact become more difficult.

Although the documentation becomes more prescriptive and ostensibly more simple, in actuality the task becomes more improvisational and more complex. (Brown and Duguid 1991: 41)

Constructing the IBIS had included prescribing the topics for early childhood nursing and in doing so made more complex the practice of early childhood nursing. The increased complexity of practice necessitated collaboration. Collectively the nurses drew on their individual and collective knowing from practice experience to learn the IBIS codes, questions, associated clinical information, skills and repertoire so that they could use the IBIS artefact. Put differently, the complexity of practice necessitated the nurses' collaboration to enable the collective sharing of practice knowledge.

After the preparatory session the nurses at a clinic would begin to practice with the IBIS, assisted by the ongoing support from the HORT and IBIS-nurses. By focusing on a site, and not conducting training for individual nurses away from their colleagues, this action was reinforcing the social process of learning (Billett 1996; Wenger 1998a; Eraut 2000) and the enactment of practice within a community (Wenger 1998a).

Another method to help participants work toward a community of practice is through the process of dialogue which helps team members think as well as act together. (Raelin 1997: 575)

Learning to think and practice together with the IBIS, all the nurses at the one site would become 'IBIS-nurses' together and in doing so enact an 'IBIS community of practice'. This is because the intertwining of learning and identity occurs within a community of practice.

Because learning transforms who we are and what we can do, it is an experience of identity. It is not just an accumulation of skills and information, but a process of becoming – to become a certain person or, conversely to avoid becoming a certain person. We accumulate skills and information, not in the abstract as ends in themselves, but in the service of an identity. (Wenger 1998a: 215)

The community health nurses learnt to think and act with the IBIS, and in doing so, became IBIS-nurses. This type of strategy has also been labelled a “human strategy for sharing knowledge” (Choi and Lee 2002) and has been advocated as effective in producing change within organisations (Worren, Ruddle and Moore 1999; McLaughlin and Mitra 2001). Alternatively labelled a “process perspective on innovation” (Swan et al. 1999a), the approach is resource intensive and time consuming but one that the HORT and initial IBIS-nurses believed necessary to engage in to support their nursing colleagues to become IBIS-nurses. They argued that the evidence of this engagement was the high completion rate for the IBIS forms. The HORT argued that this approach and outcome was an important action towards ensuring the validity of the database, while the nurses argued that the outcome emphasised the supportive and encompassing aspect of IBIS practice.

The enactment of new IBIS communities was accompanied by the enactment of an associated practice network. The next part discusses this process and outcome.

2.2 Constructing an IBIS practice network

The mobilisation of IBIS practice from the initial site of the Kidz clinic was not a rational planned activity, but rather an emergent process (Beeson and Davis 2000; Mascitelli 2000; Weldon 2000).

"I guess it was a fairly ad hoc process. It wasn't done in any structured way.. it was just by virtue of the fact that it was, it was so fluid and developing that, that it just happened. You know we started out in one clinic that we wanted to evaluate and we thought that we should spread this out to a couple more so we can compare..."

Families First Project Officer, 16/10/01

The IBIS-nurses and the HORT mobilised the use of the IBIS with other nurses in other clinics as the "opportunity presented"; this ad hoc emergent process has also been described as "in-process planning" (Weingart 1992). In conjunction with this expansion, the HORT and the increasing number of IBIS-nurses were advocating the benefits of the IBIS to their nursing colleagues and the sector management. The involvement of both users and management is regarded as an important factor in the implementation of information systems in health organisations (Ammenerweth, Eichstadter, Haux, Pohl, Sebel and Zeigler 2001a; Berg 2001). The IBIS was used to engage other nurses in discussions about the practice of early childhood nursing and to organise and unite the community health nurses into an early childhood nursing practice network.

...documents not merely contain information, but they sort and present it, organise discussions, and unite people around ideas and into communities and networks. (Brown and Duguid 2000: xxi)

The mobilisation of the IBIS artefact simultaneously united the community health nurses into their local IBIS communities and an extended integrated network across the AHS. That is, the mobilising of the IBIS aligned the conception and practice of early childhood nursing; alternatively, the IBIS technology linked the nurses in common thought and action throughout the early childhood clinics, a process described as "isomorphism" (DiMaggio and Powell 1983 in Slack and Hinings 1994). As has been the case in other organisations, the technology was an important driver of change and development (Davenport and Short 1990; Hill,

Horne and Carter 1991; Laudon and Laudon 1998; Swan et al. 1999b; Berg 2001). Information technologies have been shown to transform organisations and to provide organisations with the capability to construct new networks (Hansen, Nohria and Tierney 1999; Swan et al. 1999b; Bloodgood and Salisbury 2001).

Through mobilising IBIS practice the HORT and IBIS-nurses were nurturing an emerging 'IBIS practice network' that simultaneously enacted IBIS practice and took up the advocacy of the IBIS within the sector and across the AHS. In my terms, the mobilisation of the IBIS was realising extended relationships of accountability between the community health nurses across different locations.

The HORT and IBIS-nurses advocated with NUMs in community health to have their colleagues practice early childhood nursing with the IBIS artefact. They advocated to, and received support from, other community health nurses and senior managers for the use of the IBIS in early childhood clinics in community health. The involvement of the clinicians legitimised the mobilisation of the IBIS throughout the AHS (Myers and Young 1997). Despite opposition from a small minority of community health nurses, the increased use of IBIS throughout community health went ahead.

With support from clinicians and managers, the HORT undertook the challenging task of implementing the IBIS; in doing so the IBIS-nurses and HORT had become "change agents" (Rogers 1983; King and Anderson 1995; McPhail 1997; Boonstra and Gravenhorst 1998). In addition, through the bottom-up entrepreneurship process, the HORT had engaged in "role innovation" (Schein 1971), transforming their role from collaborating with the nurses to evaluate the Kidz clinic to implementing and continuing the refinement of the IBIS. An IBIS report indicated that universal capture of data with the IBIS in the Campbelltown sector was achieved by May 1997, approximately eighteen months after the initial construction of the IBIS. Following the merging of the Campbelltown and Camden sectors into the Macarthur sector in 1998, the IBIS was extended to the

ten early childhood clinics of the Camden sector through the same process. In this way, change became implemented through the mobilisation of IBIS practice throughout the early childhood clinics. The use of the IBIS saw the increasing standardisation of early childhood practice across community health, and further still, resulted in the construction of a new organisational network, a network of IBIS communities known as the 'IBIS practice network'.

The IBIS practice network, which expanded as new IBIS communities were enacted, became formalised by the HORT and IBIS-nurses into a recognised organisational network with a coordinating unit – the 'IBIS Users Group'; the group and network can be labelled a "sense-making structure" (Choo 1998). This group and associated network came to represent the specialised practice of early childhood nursing in the AHS.

The complexity of the IBIS artefact has necessitated ongoing collaboration between the nurses in different locations, or in my terms, necessitated the nurses to enact extended relationships of accountability. The ongoing collaboration is the enactment of the "continuous prototyping" (Mascitelli 2000) of the early childhood service. This point is now explored.

2.3 Continuous prototyping

The ongoing development of a product or service has been described as "continuous prototyping" (Mascitelli 2000) and is a strategy to capture the knowing that develops in conjunction with an artefact. Composed of representatives from all the IBIS communities, the 'IBIS Users Group' ensured the inclusion and collaboration of all the early childhood nurses in the ongoing refinement of practice. Through this ongoing collaboration the IBIS practice network and the 'IBIS Users Group' became an inseparable part of the IBIS technology (Slappendel 1996; Swan et al. 1999a), which further inscribed power

into the artefact (Arden 1970; Contu and Willmont 2003). From each of the IBIS communities a representative was chosen to belong to the IBIS Users Group. In the language of Wenger (1998a), nurses from the different IBIS communities engaged in a “delegation” to form a “boundary practice” to collaborate in the refinement of early childhood practice.

Its enterprise (the boundary practice) is to deal with boundaries and sustain a connection between a number of other practices by addressing conflicts, reconciling perspectives and finding solutions. The resulting boundary practice becomes a form of collective brokering. (Wenger 1998a: 114)

The ‘IBIS Users Group’ continuous prototyping of practice constructed commonality over their local boundaries, “reconciling perspectives and finding solutions”, and provided the nurses with a legitimate reason, and indeed necessity to collaborate. Previously geographical distance, different suburb characteristics and the nurses locally-produced interpretation of practice were barriers to collaboration. Now the increasing complexity of practice, as represented by the IBIS, necessitated an increasing level of collaboration between the nurses. In this process, the ‘IBIS Users Group’, and associated network, enabled the nurses and the HORT to “manage the intangibles” (Atchison 1999); that is, to continually address issues of trust, communication, motivation and perceptions between the nurses. When undertaking change the importance of aligning the values and practices of workers in organisations has been noted in other research (Ruggles 1998; von Krogh 1998; Palmer and Richards 1999; McLaughlin and Mitra 2001; O’Brien 2002). Change efforts in health organisations have faltered because they have failed to address these issues (Davenport and Prusak 1997; Atchison 1999; Rousseau and Tijoriwala 1999).

The ‘IBIS Users Group’ provided a structure for the community representatives to gather together to “broker” a new understanding of practice that became

represented as a new version of the IBIS. Once again they considered the inclusion of ideas from their colleagues, journals, professional development forums and other professionals from within the AHS. Sitting around a table together, they would discuss the ideas, construct a written account of the debate and propose amendments to the IBIS artefact. The document would then be transported back to their respective communities for consideration and then returned to the next meeting with comments and questions. This cycle would continue, within an agreed time frame, developing a new understanding of practice, and a new version of the IBIS, through the extended conversation.

This continuous prototyping reinforced the IBIS practice network providing a structure and process by which the nurses maintained engagement and alignment with each other, and developed their collaborative knowing (Tuomi 2000; Pan and Leidner 2003). As a result they could participate, both directly and through a representative, in the ongoing refinement of the increasingly specialised practice of early childhood nursing. Through participation in the 'IBIS Users Group' and practice network change became an ongoing accomplishment for all the nurses (Beeson and Davis 2000) and this meant that they actively participated in their own disciplining and control (Barker 1993; Porter 1995; Sewell 1998; Contu and Willmott 2003).

As has been discussed in the previous section, the mobilisation of the IBIS realised the nurses practicing with IBIS expand from those at the Kidz clinic to more and more nurses in early childhood clinics across community health. However, while an expanded number of nurses became involved initially the practice influences remained the same. Again the nurses drew upon the experience and knowledge of other clinicians. They consulted with the Area Director of Community Paediatrics and the Area Director of Nursing, they read their professional journals and attended professional development forums. In doing so, they imported the ideas of other clinicians back to their IBIS communities, practice network and the IBIS Users Group. Through these

activities, other clinicians remained or became present in the world of early childhood nursing and the nurses continued to enact the practice duality enmeshing the local with the global. The resulting second refinement of practice, or version of the IBIS developed in 1997, was similar to the initial version with only minor changes made. The intention was to ensure a common understanding of practice through input from all the IBIS communities; this was the action of consolidating the conceptualisation of practice and professional relationships across a larger area.

This section has explored how the mobilisation and refinement of the IBIS has realised further IBIS-nurses, IBIS communities and an IBIS practice network, and in doing so standardised the conception and enactment of early childhood nursing practice across community health. The next section focuses on how the ongoing refinement of practice reinforces the enactment of extended relationships of accountability between the IBIS-nurses and, significantly, extends the relationships of accountability to other professionals.

3. Reinforcing and extending the relationships of accountability

This chapter is exploring the technologisation of practice by focusing on the enactment of extended relationships of accountability. As the following discussion will show, the continuous prototyping of the practice of early childhood nursing, as represented by the IBIS, represents the ongoing enactment of the extended relationships of accountability between the IBIS-nurses themselves and necessitates similar extended relationships of accountability with other professionals. That is, in empirical terms this section explores how early childhood nursing services became integrated into an extended service network - a maternal and infant continuum of care called the MINET program.

There are two parts to this section. The first part examines how the IBIS-nurses' practice perspective became influenced by that of other professionals. In doing so, they became engaged in extended relationships of accountability as represented by a range of databases similar to the IBIS. Then the second part examines how these relationships became formalised into the MINET program, which in turn shaped the ongoing conduct of continuous prototyping, and resulted in a new understanding of early childhood practice as reflected by version three of the IBIS.

3.1 Expanding the practice perspective

As the IBIS-nurses continued to engage in the continuous prototyping of their practice the organisational context changed. As discussed by Phung et al. (2001), during this period health professionals throughout the AHS, including the IBIS-nurses, began considering the interconnections between services and the complex health relationships between parents and their children (for example see Keeping, Najman, Western and William 1996; Preski and Walker 1997; Fergusson and Woodward 1999; Silver, Stein and Bauman 1999). The professionals involved came from a variety of different perspectives, including paediatric and community nursing, paediatric and community medicine, epidemiology, population health, health service research and health promotion. The continuous prototyping involved increasing collaboration with other professionals. This resulted in the IBIS-nurses' consideration of the provision of services and health issues from a broader point of view.

“..the involvement of other professionals made us think broader, beyond the clinic, about other ‘non’ early childhood issues, about other services, how they affected us..”

Early Childhood nurse Interview 22/11/00

The broad range of perspectives brought in new ideas and the nurses began to question their current practice expectations, and made them think “beyond the clinic” (Slappendel 1996; Leonard and Sensiper 1998; Swan et al. 1999a). This shift in perspective has been described as confronting “the security of territorial fences” (Loxley 1997 in Spencer et al. 2002), alternatively considering other views has been called “the cross-pollinating of ideas” (Lang 2001) or “working with boundaries” (Clarke and Wilcockson 2002), and has been undertaken by nurses in other settings (Clarke and Wilcockson 2002; Spencer et al. 2002).

In questioning their practice, the IBIS-nurses’ notions of accountability and responsibility expanded, along with the boundaries of their work (Sarbaugh-Thompson 1998).

“In developing IBIS we identified other problems and issues that previously were there but never focused upon. We never asked how are you, but how’s the baby?”

Early childhood nurse, Group interview 16/11/00

Expanding their perspective through discussions with other health professionals, the IBIS-nurses now believed that within the clinical interaction they had a responsibility to address issues for both the baby and the parent, who for them was primarily the mother. As the quote above indicates, the nurses came to understand that focusing only on the baby meant they were overlooking many other ‘non’ early childhood problems and issues that affected the baby’s health. Their ‘old’ practice perspective did not necessitate engagement in extended networks. This was reflected in the old title for nurses working in this clinical area, ‘baby health nurses’ and similarly the service name, ‘baby health clinics’; early childhood nursing practice was focused on the baby, not the parent, family or contextual issues. Previously through unspoken negotiation, blocked either by the nurse or the mother, or together in union, the ‘non’ early childhood issues - that is, the emotional and psychological health of the mother and the family circumstances - had been rendered largely unspeakable within the clinic visit.

This is not to say that there were no nurses who were not aware of, or addressed such issues, but rather such practice was not the norm. Now participation with other professionals influenced the IBIS-nurses to collectively question the boundaries they placed around their clinical practice; once again action led to enhanced understanding and changed practices for the nurses. In my terms, their practice questioning had initiated, and was now strengthening their extended relationships of accountability with other health professionals.

The questioning led the IBIS-nurses to engage in a “boundary practice” with their colleagues in other maternal and child services, with the IBIS used as immutable mobile in this instance. The immutable mobile IBIS provided information about the IBIS-nurses work that they presented to their colleagues; the IBIS made visible and transportable the practice of early childhood nursing. However, when the clinicians examined their work together there was conflict as their documented information, experience with and beliefs about the same client group differed significantly.

“The problem was information and different services believed different things. IBIS provided information but other services wouldn’t accept it - IBIS wasn’t their information. There was disagreement about service outcomes and a recognition of a lack of integration.”

HORT Project Officer, Interview 13/12/00

The differences highlighted the need for further negotiation and the integration of services; while the fragmentation of health care has been noted by other research (Gittell and Weiss 2004). The IBIS-nurses and their colleagues recognised the need for an integrated and standardised approach to service delivery to understand and improve health outcomes. In such a situation, Bechky (2003) has described the need for the different groups to engage in the conduct of “decontextualisation”. That is, people from different groups bring different understandings to the discussion of a common problem.

The situated understanding of the groups had to be reconciled in some way that could allow for understanding to be spread across the communities. This was accomplished through informal interaction between members of all the communities that resulted in transforming local understandings of the groups to create richer, more broadly shared understandings. (Bechky 2003: 321)

This recognition and such conduct enabled new relationships, new understandings and new knowledge to be enacted (Miles, Miles, Perrone and Edvinsson 1998; Palmer and Richards 1999; Seufert, von Krogh and Bach 1999).

When workers begin to locate the differences and similarities among pieces of information they move into the essential part of their work – building relationships to create new knowledge. (Krohn, Davies and Weeks 1999: 109)

With the recognition of their “differences and similarities”, the boundaries between the services became more permeable allowing the increased flow of information and ideas. Now using the IBIS as a “boundary object” (Star 1989; Wenger 1998a) the IBIS-nurses and other health professionals “de-differentiated” the ways they talked and reasoned about their work (Timmermans, Bowker and Star 1998), devising general descriptors and areas of commonality between their services. As has been reported elsewhere, the use of a boundary object, in this case the IBIS, enabled the construction of common ground between different groups (Bechky 2003).

Reflecting upon their practice the clinicians in antenatal care came to realise that what they said and did affected the health outcomes in early childhood; and conversely clinicians in early childhood accepted they needed to collect information relevant to antenatal care to enable the evaluation of that service. In this way, professionals from the other services influenced and shaped the work

of each other. They engaged in “redundant representation” (Hutchins 1990 in Swan et al. 1999a), that is, the clinicians expanded their perspective to take responsibility for all parts of the system, not just their immediate service (Miles et al. 1998). Alternatively, this collaboration has been described as “knowledge-assimilation” (Lee 1999) or “convergent diversity” (Goodwin 1995 in Tellioglu and Wagner 2001), whereby different professions or services interconnect but retain a significant degree of independence (Gittell and Weiss 2004).

Collectively the clinicians, including the IBIS-nurses, recognised their services belonged to a ‘maternal and infant continuum of care’, that is, a clinical network within a sector, which comprises antenatal care, the birthing unit, postnatal care and early childhood services. This network and the maternal and infant continuum of care became known locally as the ‘mother and infant network’ or ‘MINET’. As the idea of MINET and the notion of a continuum of care became accepted by the IBIS-nurses, other professional perspectives and ideas expanded their practice reflections. The participation of more nurses, and other professionals directly and indirectly, meant that different questions were explored, and in doing so, this transformed early childhood practice and further reinforced the extended relationships of accountability with other professionals.

“.. as more and more clinics came on board and more and more staff became involved I guess you know, the basis for discussions broadened and the questions changed...”

Families First Project Officer, 16/10/01

Significantly influenced by the MINET concept, the IBIS-nurses’ “discussions broadened and the questions changed”, from a service input orientation to a health outcomes and population health focus, and in doing so, their practice changed. The nurses began to consider the health problems and behaviours of the mothers they saw, expanding their focus beyond just assessing the physical growth of the baby, to consider an expanded set of outcomes.

Having a community (population) focus directs managerial attention to an expanded set of outcomes that includes, in addition to cost and quality, the incidence and prevalence of health problems and risky behaviours in the community and its vulnerable subgroups. (Procenca 1998: 29)

In their work the IBIS-nurses began to target the “vulnerable subgroups”, which they labelled as ‘at-risk families’. Recall from the beginning of chapter five that these are the families initially identified as not accessing the early childhood service and as such are the families the nurses who initiated the Kidz clinic wanted to reach.

The collaboration between the IBIS-nurses and other professionals highlighted the necessity for an integrated approach to service delivery.

(The collaboration) highlighted the need for an integrated approach to service delivery along a continuum of care for mothers and infants in SWSAHS. Based on the experience of IBIS similar databases were developed at other service points along the maternal and infant service pathway. (Phung et al. 2001: 107)

From the collaboration of the clinicians in different services emerged the recognition of the maternal and infant continuum of care and the associated development of the interrelated databases. Now the IBIS became used as an “intermediary object” (Boujut and Blanco 2003) to represent the databases that the other services could develop. The databases being developed would not be exactly the same, if they were the IBIS could be considered a “boundary object”. Rather the clinicians in the different services aimed to construct databases similar to one another to allow the increasing standardisation of practice between services. In this way, the IBIS reconstituted relationships between the IBIS-nurses and their colleagues in other maternal and child health services. Alternatively, the IBIS extended the order established in early childhood practice

out into the organisational environment through facilitating extended relationships of accountability.

The collaboration and associated construction of the related databases is the enactment of extended relationships of accountability between the professionals along the maternal and infant continuum of care. The next part discusses how these relationships became formalised into the MINET program.

3.2 *The MINET program*

Through the extended relationships of accountability with other clinicians, and their personal networks, the IBIS-nurses and the HORT established a connection with the Simpson Centre, a research unit within the AHS. As noted in the introductory chapter, the Simpson Centre, based at Liverpool hospital, has over a number of years been undertaking research into the systems and effectiveness of health services. The HORT, through their professional and personal networks, were aware of the Simpson Centre and the interests the researchers held. The HORT approached the researchers to assist in managing the IBIS database and undertake research with the information that was being collected. To this end they established an “overlap” practice connection (Wenger 1998a), a sustained and direct overlap between two practices. This collaboration allowed the HORT to continue the implementation of the IBIS, knowing the research component was being effectively managed. Other research has shown the necessity of new networks as technology becomes more complex (Rebentisch and Ferritti 1995) and here again the networks and the networking contributed to the innovation and change process (Slappendel 1996; Swan et al. 1999a).

As detailed previously, the IBIS artefact was a form specifically designed to enable compilation into a computer database. The collation and compilation of the forms enabled them to become the “subject of calculation”.

Events must be inscribed in standardised forms, the inscriptions must be transported from far and wide and accumulated in a central locale, where they can be aggregated, compared, compiled and made the subject of calculation. (Rose 1999: 211)

Through the extended relationship - from the nurses to the HORT to the researchers - the Simpson Centre became the “central locale” for the IBIS database. In this place the researchers are collating, managing and transforming the information from the IBIS for their population health research; that is, the Simpson Centre is a “centre of calculation” (Latour 1986; Rose 1999).

The work of the researchers has in turn been transmitted through the clinical networks to influence the understanding of the IBIS-nurses and other health professionals, and in doing so become embedded in the practice of the early childhood nurses. For example, the researchers identified that the health outcomes for a baby are influenced by the geographical stability a family has; that is, a baby from a family that has lived in the one location could be shown to score more positively on the health outcomes measures than a family that shifted residence one or more times. This issue became translated into a question in the third version of the IBIS. The early childhood nurses now collect data about this issue allowing further research by the researchers. In this way the extended relationships of accountability extend from the nurses to the researchers and back again.

The IBIS-nurses, the HORT and researchers’ extended relationships of accountability also became enacted in another way, in that they combined to promote the IBIS and MINET to internal and external audiences. At professional conferences the IBIS and MINET was presented, establishing external credibility for the ideas, For example presentations were made to the Public Health ‘Health Outcomes’ Conference in 2000 and 2001. As discussed previously, they also internally promoted the IBIS and MINET to other community health nurses and

their senior managers, building local support for the artefact and ideas (Myers and Young 1997; Swan et al. 1999a).

This promotion and advocacy was ultimately successful. Over time community health nurses from the other sectors, the “street level actors”, took up the ideas and together they successfully advocated to their managers for the adoption of the IBIS and a specialised early childhood service within their respective sectors; that is, the bottom-up advocacy was successful (Sarbaugh-Thompson 1998). The SWSAHS formally endorsed an infrastructure for communication and the provision of information for the maternal and infant continuum of care that became known, as noted earlier, as the “maternal and infant network”, or “MINET” program; this was in October 1997. The MINET program aims to establish a maternal and infant continuum of care in each sector. Appendix two represents the maternal and infant continuum of care diagrammatically and recall that the MINET framework and a short description of the program has been described in the introductory chapter. However the transferring of the idea of MINET into action has been, and remains, a very slow process with activities continuing in 2002 and beyond. This is not unusual though as other research, including research with nurses (McPhail 1997), has noted that significant change takes time (Porter-O’Grady 1995; O’Brien 2002). An associated part of this infrastructure has been the establishment of specialised early childhood services in community health and the expanded use of the IBIS right across the AHS. Only at the end of 2000 were the negotiations for the implementation of IBIS completed; the proposal was to implement the IBIS in the Fairfield and Bankstown sectors in 2001, then the Liverpool sector in early 2002, and finally in Wingercarrabee mid-to-late 2002. Chapters seven and eight report on the activities in the Liverpool sector regarding the establishment of a specialised early childhood service, the mobilisation of the IBIS by this team and implications for practice.

Participation in the MINET program in turn influenced the continuous prototyping of early childhood practice that was underway. The IBIS-nurses were influenced by MINET to adopt a health outcome and population health focus in their early childhood practice. Reviewing their practice, they expanded their focus to include psycho-social issues and socio-demographic information alongside physical health factors. That is, they appropriated understandings and artefacts from other professionals into their practice. For example, discussions with mental health professionals challenged the IBIS-nurses to examine how to address psycho-social issues in their clinical practice. In response, the IBIS-nurses appropriated the Edinburgh Postnatal Depression Scale (EPDS), a mental health screening tool, into their practice and they changed the IBIS so they could inscribe the result onto the IBIS form. The EPDS aligns (Wenger 1998a) the nurses' conduct to enact similar ways of communicating and acting to their colleagues in mental health services. Further still, using the EPDS meant the nurses now, where appropriate, refer the parent on for further assessment and counselling. Both the EPDS and IBIS can be seen as "coordination devices" (Timmermans and Berg 2003) where their use necessitates, and enables, further action and interaction with other health and welfare professionals. In this way, the continuous prototyping assembled and appropriated further structure, scientific basis, technical expertise and coordinating mechanisms into the practice of early childhood nursing.

The process of (constructing,) mobilising and refining the IBIS, and the simultaneous participation in the MINET program, is the social process of learning and changing early childhood nursing practice (Lave and Wenger 1991; Wenger 1998a). Through this learning-as-working activity (Brown and Duguid 1991, 1998) here again action led to understanding (Constant 1987; Orr 1990; Lave and Wenger 1991; Ford and Ogilvie 1996). In the words of an IBIS nurse,

"We grew as IBIS grew."

Early childhood nurse, Group interview 16/11/00

This second cycle of the refinement of practice, finalised at the end of 1998 with a third version of the IBIS, has enabled and required new ways of thinking, new questions and new artefacts within the IBIS-nurses' clinical practice, and as importantly, new referral networks for them. Through the continuous prototyping early childhood practice became more complex, necessitating the community health nurses' increasingly intense collaboration and engagement into their IBIS practice network and also the MINET program. Taken together, the IBIS practice network and the maternal and infant continuum of care, comprise a "constellation of practices" (Wenger 1998a). That is, the interconnections between the different practice communities unite them as one network within the sectors and across the AHS.

Previously the IBIS had the potential to be used as a clinical assessment tool and a service management tool. Now the third version of the IBIS introduced the capacity for population health research, and standardised and coordinated practice between professionals in health services and other agencies. The continuous prototyping reinforced the collaborative practice of the IBIS-nurses and saw them utilising new technologies in their practice, which formalised and maintained extended practice relationships with other health and welfare professionals.

This section has described how the continuous prototyping of practice has necessitated the early childhood nurses increasing collaboration with colleagues in other services. Together they have established a maternal and infant continuum of care that has become known as the MINET program, which taken together with the IBIS practice network comprises a "constellation of practices" across the AHS.

4. Conclusion

This chapter has explored how the mobilisation and refinement of early childhood nursing practice, as represented by a multidimensional practice resource, the IBIS, has necessitated and required new practices and extended relationships of accountability.

The mobilisation and continuous prototyping of early childhood practice, or IBIS practice, has realised the enactment of a new network across the AHS - the IBIS practice network. Through these processes and the associated network the IBIS-nurses, the early childhood nurses in community health, have become engaged in the enactment of an increasingly standardised and specialised collaborative practice. Further still, the discussion has examined how the continuous prototyping of practice has involved the nurses appropriating other understandings and artefacts into their practice and embedding these into the IBIS artefact. In doing this IBIS became a “coordinating device” thereby reconstituting the relationships between the IBIS-nurses and other health and welfare professionals.

Early childhood practice has also been shaped by, and simultaneously contributed to the shaping of, the changing organisational context. Across the AHS a wide range of health professionals, including the IBIS-nurses, have collaborated to conceptualise their work in increasingly similar ways. In doing so they have promoted a new practice network within each sector, a maternal and infant continuum of care. This idea has become formalised within the AHS and is known as the MINET program. Using the IBIS as a model, the professionals across this continuum have developed a series of interrelated databases and increasingly standardised their understanding, practises and clinical relationships. To rephrase, the refining of practice, as represented by the IBIS and influenced by the MINET program, has reinforced, and indeed necessitated,

the enactment of extended relationships of accountability between the IBIS-nurses and other health professionals.

The next two chapters continue exploring how change has occurred through the technologisation of practice. This chapter and the previous one have explored the historical process, and outcome, of constructing, mobilising and refining practice as represented by the IBIS. Now the next two chapters examine the present day and focus on the unfolding experiences of one team of early childhood nurses that arise from this ongoing (historical) process. By focusing upon one team, as the research does, this enables the examination of how practice becomes established, visibilised and thereby sustained in a specific context. The internal dynamics of a community are explored and linked to the multidimensional practice resource and extended relationships of accountability.

The empirical focus now becomes the nurses of the Child and Family Health Nursing Team (CFHNT) in the Liverpool sector of the AHS. Firstly, chapter seven examines the third aspect of the technologisation of practice. That is, how accountability becomes an ongoing collective achievement through the amalgamation of the organising and service delivery roles within a collaborative community of practice. In empirical terms the research shows how a specialised early childhood service, the CFHNT, is constructed and how collaboration becomes necessary to determine and enact their practices. Then chapter eight explores in detail the fourth aspect of the technologisation of practice, that is, the assemblage and appropriation of understandings and “technologies” by the CFHNT community which strengthens the local and extended relationships of accountability and expands the boundaries of practice. This examination draws upon the notions of “governmentality” (Foucault 1979; Rose 1996, 1999) and “governance” (Rose 1999; Courpasson 2000; Flynn 2002) to show how the ongoing enactment of practice is simultaneously the realisation of discipline and expertise.

Chapter Seven: The ongoing enactment of accountability

“I learnt the job through talking to others, doing clinics with others – being practically involved, watching what they did, listening to what they said, asking questions when I didn’t understand how they did things.. and then you find a way to do the same, a way that best suits you...”

Karyn, ECN, Informal discussion 20/5/01

Over time, this collective learning results in practices that reflect both the pursuit of our enterprises and the attendant social relations. These practices are thus the property of a kind of community created over time by the sustained pursuit of a shared experience. It makes sense, therefore to call these kinds of communities communities of practice. (Wenger 1998a: 45)

1. Introduction

This research is exploring the necessity for collaboration to enact increasingly complex work activities, and in doing so introduced the term the ‘technologisation of practice’ as a shorthand way to describe the integrated process and outcome. Two of the four aspects of the technologisation of practice have been explored in the previous two chapters. That is, firstly the standardisation of the conception and enactment of practice through constructing a multi-dimensional practice resource, and secondly, the realisation of extended relationships of accountability through mobilising and refining the practice artefact, have been discussed.

The next two chapters explore the third and fourth aspects of the technologisation of practice respectively, and are united through an empirical focus on the Child and Family Health Nursing Team (CFHNT), who provide the early childhood services in community health for the Liverpool sector of the SWSAHS.

Firstly, this chapter examines the third aspect of the technologisation of practice - the integration of the organising and service delivery roles within a collaborative practice community – and in doing so demonstrating how knowing and practice within one context are collaboratively established and maintained. While this aspect is similar to the first aspect explored in chapter five, as both consider a community of practice, the difference is significant in two interrelated ways. Firstly, this third aspect focuses on the construction of the community, rather than of a multi-dimensional resource. Secondly, this third aspect highlights how accountability became an ongoing collective achievement by the community. Accountability is enacted by the integration of the organising and service delivery roles, which is necessitated by the increasing complexity of practice. Then in chapter eight the fourth aspect of the technologisation of practice is discussed, that is, the collaborative community assemblage and/or appropriation of further technologies into practice. Through these actions, the community strengthens the local and the extended relationships of accountability and expands the boundaries of practice.

Similar to their colleagues in other places, the enactment of the CFHNT collaborative community involves the enactment of the practice dualities of individual-community, subjective-objective and local-global. To these practice dualities two others are added. Firstly, chapter seven identifies a formal-informal duality as the nurses enact their community of practice. Secondly in chapter eight, a governmentality-communal self-governance duality is identified as the nursing team continually enact self-discipline while realising their expertise.

The present chapter, which explores the enactment of accountability by a collaborative community, is comprised of four sections. Firstly, the construction of an accountability context, which provides the opportunity for a collaborative community to be enacted is detailed. The second section discusses how responsibility is enacted through the reorganising and facilitation of the team. The following section explores how the amalgamation of the organising and service

delivery activities by the CFHNT, through the integration of the formal meetings and informal interactions, enables the sharing of formal knowledge and practice 'knowing', and in doing so realises accountability. The final section draws these elements together to discuss the enactment of accountability by the collaborative community.

2. Constructing an accountability context

This section explores the construction of a context that realises the enactment of accountability by the collaborative practice community. Empirically the discussion focuses on the reorganising of the generalist nursing team that enables the engagement and collaborative participation of the nurses on the CFHNT.

The accountability context is shaped by three factors. Firstly a lack of engagement - characterised by limited participation, low levels of trust and poor communication - within the generalist nursing team is detailed. These three elements are barriers that constrained the learning and collaboration of the nurses. Secondly, the opportunity to construct a collaborative community occurred with the introduction of a "change agent" (King and Anderson 1995; McPhail 1997; Boonstra and Gravenhorst 1998) and a "boundary object" (Star 1989; Wenger 1998a) coinciding with a clinical practice crisis, which revealed the opaqueness of practice (Suchman 1987; Alvesson 2001; Contu and Willmott 2003). This leads into the third factor explored, the "change conversation" (Duck 1993; Ford and Ford 1995; Ford 1999; Gold and Watson 2001) that was conducted and resulted in the re-organising of the nursing role. As a result, two specialised services in community health were established - the early childhood service, provided by the CFHNT and the primary health service, delivered by the Primary Health Nursing Team (PHNT). To rephrase, the nurses constructed a context whereby they collectively became accountable for their practice.

2.1 *A lack of mutual engagement and trust*

As discussed previously, a key element of a community of practice is mutual engagement (Wenger 1998a), which is achieved in temporal, physical and emotional connections. Through engaging together people construct meaning and their practice (Wenger 1998a, 1998b). In a collaborative community trust and respect are necessary for practice (Hoskins, Liedtka and Roseblum 1998). The lack of trust and respect has been identified as a major factor that hinders learning (Davenport and Prusak 1997; Coopey 1998) and knowledge sharing (Fernie et al. 2003) – key components of a community. Further, trust has been recognised as necessary for the functioning of the health system.

Trust is important to health systems because it underpins the co-operation throughout the system that is required for health production. (Gilson 2003: 1461)

The delivery of health care depends upon the effective interaction and integration of a range of services (Porter-O'Grady and Wilson 1995), and without trust and respect the communication between professionals necessary to negotiate ongoing changes cannot occur (McPhail 1997; Boonstra and Gravenhorst 1998; Gilbert 1998; McGill and Slocum 1998; Diamond 1998; Rousseau and Tijoriwala 1999; Cacioppe 2000; Russell, Calvey and Banks 2003; Gilson 2003).

In 1999 the Liverpool community health generalist nursing team was a team working in an environment characterised by a lack of trust, limited communication and a high degree of stress. The nursing team was comprised of generalist nursing positions, however there were three other positions attached to the team that were focused only on early childhood nursing. Then at one point in time, a combination of factors left one nurse isolated in this role.

“..only Ruth was working in early childhood. It was very isolating for her, she was not part of the group, and she didn't interact with

the team. No-one went to her to provide any support, she was totally outside of the team. That's how she was functioning, and that's how it had been left to her, no-one wanted to know."

Gwen, A/NUM-CH, Interview 8/10/01

While a part of community health, the early childhood positions operated totally separate to the other nurses and consequently were very isolated in their work. Apart from the three early childhood positions, all the nurses were "generalists", participating across all aspects of the nursing work. They provided clinical services, including wound management, school screening, support for cancer patients and early childhood nursing, and they also completed the associated administration tasks and attended team meetings. Consequently, a typical workday for the nurses included a wide range of nursing tasks – the morning in an early childhood clinic and then the afternoon combining home visits for palliative care with other short visits to change the dressings on wounds.

This situation had evolved over a number of years, with the nursing practice boundary slowly being drawn ever wider as more and more nursing duties came to be included. Such expansion and change had become a norm for the nurses (Montuori 2000). The NUM explained that the community nurse role had expanded incrementally in response to the transfer of services and ongoing care responsibilities from the professionals in hospital to those in community health, general practitioners and families in their own home.

"...also we were getting some more acute referrals, post surgical acute coming out because the hospital needed to discharge them, and it was someone's coming out with a drain are you able to manage that? We (the hospital clinicians) just wanted one or two visits and then the drain removed - yes we can do that. We took over a lot of the stuff that was taken back to the hospital once, where they went back to emergency and sit there hours to get their dressings done. Well they started looking at how community nursing can do that ..."

Gwen, A/NUM-CH, Interview 8/10/01

By way of contrast, perhaps only in the emergency department of the hospital could a nurse expect to face such diversity. The generalist-nursing role had become increasingly broad, which for many nurses was both difficult and stressful.

".. oh yea, yea umm it was ...umm...(laughter)... it was horrible, my gosh like.., and then we'd have to go from doing, like a baby clinic, where we saw new babies, to going out and seeing a palliative care or something like that, it was..."

Alison, CNS-EC, Interview 15/10/01

At the time this difficult situation was regarded as normal (Contu and Willmott 2003); this breadth of practice was expected in the role as a community nurse. The nurses' stressful reaction to their incrementally expanding role is similar to the experience of other people in other settings (Nader and Tushman 1999).

Change is inherently stressful. In addition to doing the work one was trained to do, each person must periodically readjust, learn new skills, shift long held patterns, frequently learn new sets of rules, identify and work out unforeseen bugs, and relate to new people. (Speice, Laneri, Kennedy and Engerman 1999: 73)

However, the opportunities to readjust and learn were limited due to the organising and managing of the nursing team (Cott 1997). A significant factor in maintaining this stressful situation was the separation of the organising of the work from the delivery of the work; in nursing terms, the former has been labelled care management work and the latter care production work (Schweikhart and Smith-Daniels 1996). That is, the generalist nursing team was a directed team. The nurses were told what their work duties were and then expected to carry them out. While they attended team meetings, attendance did not mean participation. The meetings were used to provide information to the nurses, not to involve them in the organising or decision making process. The nursing team was being run as a group with a defined leader (Katzebbach 1993), where the

word of leader, the NUM, was final. This style of leadership has been described as “authoritative” leadership (Goleman 2000) and the autocratic style of the NUM precluded any discussion of change (Pichault 1995 in Boonstra and Gravenhorst 1998).

Adding to the difficulty the team did not have a process or mechanism that enabled acknowledgement of the practice difficulties (Goss, Pascale and Athos 1997). The nurses were expected to have the knowledge and skills required to do the community health nursing work, simply because they were nurses. Further training was not seen as a priority, and in particular, training in early childhood was not seen as a necessity.

“The context of community health was one of significant stress due to a diverse and emotionally demanding role, inadequate formal support, a lack of ongoing training and education, poor communication and a lack of trust and respect.”

Gwen, A/NUM-CH, Informal discussion 9/10/01

There was a lack of engagement between the nurses on the generalist team, learning was at a minimum and the nurses were undertaking tasks, not participating within a collaborative community.

Trust is an important factor in achieving change (Heckscher 1994; Davenport and Prusak 1997; Rousseau and Tijoriwala 1999). Whereas a lack of participation leads to a lack of trust (Zajac and Bruhn 1999) conversely participation is likely to develop trust (Nutt 1996; Light 1998; Gilson 2003); West (1990) has described this interrelationship as “participative safety”. Similarly, when employees trust their managers they are willing to engage in change (Osterman 1994; Rousseau and Tijoriwala 1999; Wise 1999) and a manager’s effectiveness as a change leader depends upon their capacity to construct trustful bonds with their workers (Diamond 1998; Rousseau and Tijoriwala 1999). To summarise with Dirks and Ferrin (2001: 455):

Trust provides the conditions under which cooperation, higher performance, and/or more positive attitudes and perceptions are likely to occur.

At this time the situation in community health was a double bind in relation to trust. In directing the team as she did, the NUM could not establish trustful bonds with the nurses, and they for their part, did not trust her to participate, thereby mutually blocking the potential for change. However, as is explored in the next part, an opportunity for change arose.

2.2 Opportunity for a collaborative community

The opportunity to realise a collaborative community presented with the combination of a “change agent” (King and Anderson 1995; McPhail 1997; Boonstra and Gravenhorst 1998) and a “boundary object” (Star 1989; Wenger 1998a) coinciding with a crisis that revealed the opaqueness of practice (Suchman 1987; Alvesson 2001; Contu and Willmott 2003).

Firstly, there was a change of NUM in community health. The new NUM brought a different approach to the organising and managing of the team. She explained that she strove to facilitate rather than direct the team, a strategy that has been shown to promote responsibility (Maudsley and Strivens 2000). Enacting a “democratic” leadership style (Goleman 2000), the new NUM endeavoured to engage the nurses in the organising and delivery of the nursing services (West and Wallace 1991). This democratic approach enabled the establishment and enactment of trust within the nursing team (Gilson 2003); alternatively described as “mutual dependency based on reciprocity” (Zuboff 1988). Hence the new NUM was a “change agent” (King and Anderson 1995; McPhail 1997; Boonstra and Gravenhorst 1998), or “change leader” (Diamond 1998), necessary to initiate and drive forward a change process (Porter-O’Grady and Wilson 1995). The NUM was a vital mediating influence to bring about change (Bolton 2003).

Secondly, there was the introduction of a “boundary object” (Star 1989; Wenger 1998a) that became an artefact around which participation and organisation became enacted. The AHS issued a directive that a universal home visiting program for all new babies would be implemented as part of the Families First program. As a result, the generalist nursing team was required to adapt their early childhood service to incorporate home visiting along with their early childhood clinics. The directive was a boundary object that constructed a connection between Families First program and the nurses, and simultaneously aimed to standardise the actions of the early childhood nurses across the AHS. This directive, or boundary object, then became a major topic of consideration for the generalist team. Not surprisingly, this added significantly to the anxiety and stress within the team. The NUM recalled one of the nurses during a moment of crisis.

“She was like,... I’ve got ten palliative care, and six of those are really at the end stages so I can’t manage this and I’ve got to go to a baby clinic and then this...”

Gwen, A/NUM-CH, Interview 8/10/01

Individually and as a group the nurses did not know, nor could they imagine, how they would manage the inclusion of the home visiting requirement along with their current workload. The senior nurse began to encourage the team to consider how they were operating, how they were organised and whether a change in their role was necessary to enable the delivery of the nursing services.

“With a general model the Families First initiative would not have been able to be implemented appropriately. Because you still had your home nursing, full screening, palliative care role as well,... the role was too complex, too stressful ...”

Julie, A/NUM-EC, Interview 11/10/01

The continuation of the generalist role was considered to be inconsistent with the requirements and demands of the work. The NUM, acting as the change leader,

was striving to engage the nurses to reflect upon, and become involved in, the organising of their work. That is, the complexity and demands of the work was necessitating an increasing amount of collaboration between the nurses and a reconsideration of their current practice.

As the generalist nursing team was beginning to explore the implications of the AHS directive a clinical practice crisis occurred that brought the actuality of their current clinical practice into sharp focus. Only when problems emerge does the opaqueness of practice become evident, otherwise practice seems transparent (Suchman 1987; Alvesson 2001; Contu and Willmott 2003). This crisis highlighted the difficulty the nurses were having in enacting the early childhood work. What had appeared transparent, because of a lack of a communication (Goss, Pascale and Athos 1997), became startlingly opaque through a crisis.

The generalist nursing team and a non-government family support agency provided early childhood services to the same client group. The NUM of community health and the nurse co-ordinator from the support agency had worked together previously. They had a good working relationship and respect for each other. One day the nurse coordinator advised the NUM that she had just seen two babies that were grossly underweight and required immediate medical attention. She explained that the mothers had informed her that a community health nurse had seen their babies the previous day. The nurse coordinator was concerned that the community health nurse had failed to identify that there was a problem, let alone a serious one. The NUM agreed to follow-up with the community health nurses to speak to them about the clinical practice concern.

Then a few days later, another baby was presented to the family support agency in a similar state to the previous two that had caused such concern. A mother and baby were referred to the service from a community health nurse for support and parenting issues. However the baby was presented grossly underweight, in such a state that immediate medical attention was necessary. Once again, a nurse had not been able to identify that the baby required immediate attention.

With this third presentation the nurse coordinator again called the NUM, who this time immediately visited the support service to see the baby herself. Viewing the baby, the NUM knew she had a major problem. The NUM identified the baby as the same baby a nurse had called her about the previous day. Over the telephone the NUM had discussed with the nurse the presentation of the baby and she was given positive answers on everything she asked about the baby's health. The baby the NUM had described to her was a healthy looking baby, yet on looking at the baby with her own eyes her assessment was completely different.

"I looked at it and thought oh my god, it needs to be in hospital, it will be dead in 48 hours..."

Gwen, A/NUM-CH, Interview 8/10/01

Here the NUM's direct visual inspection enabled her to identify that there was a problem (Tyre and von Hippel 1997). The visual interaction with the baby revealed that the language and understanding of the NUM did not match that of the nurse; the richness of the context could not be translated over the medium of the telephone. There was a breakdown in meaning that could only be identified when the NUM brought her tacit knowledge (Polanyi 1958, 1967), enacted through her eyes, to the clinical setting. There was a serious breakdown in meaning with the NUM and nurse using a similar discourse but each having a very different understanding (Eraut 2000). This interruption to the everyday activity of the generalist nursing team provided an opportunity for change (Tyre and Orlikowski 1994) and the seriousness of the incident meant that change was more likely to occur (Bechky 2003).

The reoccurrence of this clinical practice necessitated that the NUM reconsider her understanding of the clinical care being provided by the community health nurses. What these three incidents suggested was that some nurses had a very low level of expertise in this area of clinical practice.

“When I realised what was happening and looked at early childhood, my first reaction was I want to close the service down. I was very concerned about the level of practice, about the information that was being given, and about the management of babies coming out of hospital - it was stepping back 15 years into an unknown world...”

Gwen, A/NUM-CH, Interview 8/10/01

Clearly some of the community health nurses' practice in the early childhood area was neither an appropriate, nor safe, standard. As Clarke and Wilcockson (2002) have noted, some clinicians' practice can be harmful to the people they care for. These examples could have been, but were probably not, isolated incidents. Regardless the NUM knew that she could not take the risk that they were. The revelation of this practice precipitated a crisis. What the NUM understood to be appropriate clinical practice was revealed to be different from what the nurses were enacting. In this way, an opportunity for accountability to be a collaborative responsibility arose through the convergence of the change agent, boundary object and clinical practice crisis. The next part discusses how to realise this opportunity the NUM engaged the team into a change conversation.

2.3 A change conversation

The involvement of frontline workers has been noted as an effective strategy to affect change in public sector organisations (Beer, Eisenstat and Spector 1990; Nadler and Trushman 1999; Beer and Eisenstat 2000; Beer and Nohria 2000; O'Brien 2002) and has been labelled a “bottom-up approach” (Sarbaugh-Thompson 1998) or “backward-mapping” (Fiorino 1997). A process by which to engage and involve frontline staff in change is to undertake a “change conversation” (Duck 1993; Ford and Ford 1995; Ford 1999; Gold and Watson 2001). The clinical practice crisis, the AHS directive and the new NUM provided the impetus for the nurses to engage in such a conversation about the work of

community health nursing. The currently accepted understanding for community health nursing, whereby they operated as a directed generalist nursing team, was thrown open for reconsideration and renegotiation (Van Maanen and Barley 1984; Araujo 1998). To realise a new understanding the NUM took two actions. Firstly, the NUM demanded alignment with a clinical practice directive. Then secondly, the generalist nursing team engaged in a discussion about the organising and enactment of their work. These actions comprised their change conversation.

Firstly, and immediately, the NUM enacted a strategy to share the ownership of meaning (Wenger 1998a) with the nurses.

Demanding alignment itself can be a means of sharing ownership of meaning. This can happen, for instance, when demanding alignment is a way of demonstrating a possibility and of providing initial guidance in order to hand over control. (Wenger 1998a: 206)

The NUM issued a local directive regarding early childhood nursing practice, to which she demanded compliance. While this directive could be taken as extreme, in fact the directive was a strategy by which she provided initial guidance prior to handing over responsibility to the nurses for their work. The directive required that all babies whose birth-weight is not regained within fourteen days after birth must be referred to, and seen by, a medical practitioner on the same day. This directive aimed to provide a last resort or safety net for practice. In this instance the NUM is exercising a “coercive” form of leadership (Goleman 2000); that is, directing the actions of staff to ensure compliance, a form of leadership appropriate in a crisis. The capacity to alter leadership style during a change process is recognised as an important skill (King and Anderson 1995).

Accompanying the directive the NUM conducted a mandatory early childhood in-service for all the community health nurses.

"I did an assessment of the team where they felt they needed their knowledge base improved. It was all around early childhood - they felt they didn't have the knowledge or the skills. They said the only knowledge they bring is the knowledge as parents from raising our own children. We don't know anything else other than that. We don't know how to check a new born baby - one of the first in-services I gave was how to do a new born check..."
Gwen, A/NUM-CH, Interview 8/10/01

This nursing in-service identified and practically demonstrated how to conduct a health assessment of a newborn baby, setting out the minimum requirements to the nurses for their clinical practice. By including the whole nursing team the NUM sought not to target specific individuals, nor assume others were competent. Through these interrelated activities the NUM provided guidance, support and the beginnings of responsibility and accountability to the nurses for their work.

The second action to realise a new understanding for practice was the NUM engaging all the nurses in a discussion about the organising of the clinical work. This was an important action, as to achieve lasting change the inclusion and participation of all staff is necessary (Porter-O'Grady and Wilson 1995; Boonstra and Gravenhorst 1998; Dirks and Ferrin 2001; Gilson 2003). This action has also been described as building a "social architecture for change" (Hill 1991), a process that transforms the interactions and conduct of the people involved. This discussion was a process mechanism that enabled the acknowledgement of the stress and difficulties in community health (Goss, Pascale and Athos 1997). Participation enabled the development of trust, the communication networks necessary for change and, in doing so, established a basis for ongoing collaboration (Mintzberg, Jorgensen, Dougherty and Westley 1996). In this way, the nurses and NUM became partners in change (Diamond 1998) and change became enacted as a team (West and Wallace 1991; Worren, Ruddle and Moore 1999).

Whenever employees, at whatever level, have been involved in decision making beyond the limits of their usual job descriptions, they have proved capable of developing improvements that their superiors could never do alone. (Heckscher 1994: 20)

Together the whole nursing team, the NUM and all the generalist nurses, became involved in reconsidering the organising of the work. Involvement in this way has been described as a change from superior-subordinate relationship to collaboration with authority (Diamond 1998). In this ongoing conversation the NUM is exercising a blend of “authoritative” and “democratic” forms of leadership (Goleman 2000). Using her authoritative leadership the NUM is using her positional authority to direct and lead a conversation of change; simultaneously using democratic leadership she is mobilising energy for change by involving the participation of all the nurses (West and Wallace 1991; Clarke and Meldrum 1999).

Participating in this ongoing conversation the nurses identified motivation and divided interests as the major impediments to improving clinical standards. The NUM recalled the situation.

“I looked at getting some intensive education in it (early childhood) - it had become apparent that here we couldn't maintain the role as a generalist role. There was a lot of people who indicated that they weren't interested in early childhood. They didn't want to do mother's and babies, they hated it - so what is the purpose of making people do something that they're not going to do well and have no interest in...”

Gwen, A/NUM-CH, Interview 8/10/01

The feedback from the team was that the majority of nurses did not have an interest in all aspects of the generalist nursing role; some clinical areas interested some and not others. Consequently, clinical practice standards varied

significantly between individuals. The motivation to achieve and maintain proficiency across the broad spectrum of community nursing was not present. The honesty and trust being enacted by the nurses enabled change to occur (Boonstra and Gravenhorst 1998; McGill and Slocum 1998). That is, in their collaboration the nurses were beginning to collectively enact accountability for and to themselves.

The nurses' discussion resulted in a new construction of meaning, whereby they engaged in "role innovation" (Schein 1971) constructing a division in their clinical responsibilities. Community health nursing - the generalist role - became separated into primary health nursing and early childhood nursing; the former became the Primary Health Nursing Team (PHNT) and the latter the Child and Family Health Nursing Team (CFHNT). The two clinical responsibilities provided the basis for two nursing teams in community health, all nurses would be known as community nurses but work in one clinical area, on one team only. In this way, a new practice boundary (Wenger 1998a) was constructed in community health nursing. In theory, nurses with the appropriate skills and experience would be able to cross the boundary, moving from one team to the other when a vacancy occurred. Also, the nursing positions could be reallocated to the other team if there was a significant workload change between the teams.

In summary then, the pressure of enacting an increasingly complex role necessitated the "role innovation" undertaken by the generalist nursing team, which saw the construction of two nursing teams in community health. The construction of an accountability context led to the establishment of the PHNT and the CFHNT, the ongoing focus for this research. The establishment of the CFHNT with the responsibility for a specialised service was an important step in the enactment of accountability by a collaborative community, and contributed to the technologisation of practice in this location. The establishment of the CFHNT enabled responsibility to be a collective undertaking. The next section explores

this ongoing process, and outcome, that contributed to the enactment of the CFHNT collaborative community.

3. Enacting responsibility

This section discusses how, within the context now established, responsibility becomes a collective undertaking of the CFHNT and contributes to the enactment of accountability by the collaborative community. That is, accountability becomes an ongoing collective achievement by the community; this is the third aspect of the technologisation of practice.

There are two parts to this section. Firstly, the re-organising of the generalist nursing team into the CFHNT is noted as an important step towards enacting responsibility, and then secondly the facilitating of the team is shown to be a process that contributed to the realising of the collaborative community.

3.1 Re-organising enacts responsibility

The CFHNT became comprised of a nurse co-ordinator, a position subsequently upgraded to a NUM, and nine community health - early childhood - nurse positions. The nurse positions were comprised of the three early childhood positions, which already existed and six other positions from the generalist team.

“We interviewed primary health nurses who were interested in working on the early childhood team, and six of those who applied were successful - that’s how we got the staff we have.”

Julie, A/NUM-EC, Interview 11/10/01

In this straightforward way, a small group of nurses came together to comprise the CFHNT and, as the ongoing discussion will show, all became engaged in

organising and enacting the early childhood service. Having a small group with a supervisor responsible for the work is effective in improving work performance (Bennett 2001; Gittell 2001; Sheldon 2001), and to facilitate the rapid transfer of knowing and learning (Lam 1997). That is, a small group of staff with a supervisor can build close relationships, a better understanding of the work, focus on shared goals, problem solve together, mentor each other and give direct performance feedback. To put this differently, they can enact a collaborative community.

The reorganising was an important step towards the enactment of a collaborative community as organisational structures frame and regulate nursing conduct (Jones and Cheek 2003). Placing people in a new organisational context imposes new responsibilities, roles and relationships, and consequently causes their conduct to change (Zuboff 1988; Beer, Eisenstat and Spector 1990; Worren, Ruddle and Moore 1999).

We cannot change behaviour by addressing behaviour alone. We must also address structures within which that behaviour emerges. If we do not change the structure, we cannot successfully sustain the behaviour we want to change. (Porter-O'Grady and Wilson 1995: 86)

In a new organisational structure, as members of the CFHNT no longer could the nurses remain non-participating or part-participating members, as some had been on the larger generalist team. The reorganising of the nursing responsibilities meant the nurses were placed within a new structure that identified a small group with the work (Fernie et al. 2003). As a team they were collectively given control over their work, an action that has been shown to increase a sense of responsibility and accountability (West and Wallace 1991; McPhail 1997; Ingraham, Thompson and Sanders 1998; Maudsley and Strivens 2000; O'Brien 2002). Being placed in this new structure was not the only

requirement. The nurses still had to learn to work together and the facilitation of the team was a process to achieve this outcome.

3.2 *Facilitating responsibility*

The influence of the two senior nurses, the NUM of community health and the early childhood team, was critical in enacting the collaborative community (Zuboff 1988; Jones and Cheek 2003; Bolton 2003). The two senior nurses brought a vision for the team based on their previous work in Ingleburn with the IBIS; having a vision enabled the development of clinical practice (Clarke and Wilcockson 2002). At Ingleburn they had been involved in the construction, mobilisation and refinement of the IBIS, where the collaborative experience of exploring their practice was a positive and enduring one.

“Ingleburn was sometimes called the difficult team, that was the reputation they had when I went to work there. They were never a difficult team, difficult personalities there, but they are anywhere. They were a very innovative forward looking team.... pushed the boundaries, they didn't say yes just to say yes, but actually said why.... explain to us and what are the results going to be. A thinking team to me, difficult because they didn't just agree to whatever was happening..”

Gwen, A/NUM-CH, Interview 8/10/01

The two senior nurses now drew upon their shared experience to make the new early childhood team “a thinking team”, as the team at Ingleburn had been. Here the nurses are seeking to reproduce a process of change, not just transplant the innovation of the IBIS (Dixon 1997; Fullan 1999). The leadership being enacted by the NUMs is building upon the authoritative and democratic forms used previously to incorporate an “affiliative” dimension (Goleman 2000), whereby the collaboration and participation of all team members is being sought (West and Wallace 1991).

Together the NUMs actively set out to engage the CFHNT in the organising of the work and the delivery of services. They encouraged a context of questioning, involvement in decision making and risk-taking (Clarke and Wilcockson 2002). The support and encouragement of the NUMs was critical in facilitating the nurses from being a collection of individuals to a collaborative team (Sheard and Kakabadse 2000). The NUMs strove to do this through negotiating the purpose, direction and activities of the work, rather than directing or ordering what should, or should not be, the work of the team (Beeson and Davis 2000; Bolton 2003).

“...what I've learnt is on the job - observations, from other managers, reading articles and information I can get from colleagues and attendances at appropriate workshops and so forth. So what I'm trying to achieve with the team is team spirit, yes, ... to work as a team, and not as individuals, to make decisions for themselves as a team, with me.. facilitating it, not going in and saying that this will be done...”

Julie, A/NUM-EC, Interview 25/10/01

The NUMs strove to facilitate collaborative relationships within the team, moving the emphasis away from the traditional hierarchal structure (Dobuzinskis 1997). Here the construction of reciprocal relationships, open communication and the positive motivation of the team are being emphasised (West 1990; Mintzberg et al. 1996; Hoskins, Liedtka and Roseblum 1998). Such an approach is appropriate as the implementation of nursing programs cannot be successfully achieved through using a top-down model (Hanks and Smith 1999); a top-down model constructs distrust and commonly ends in failure (Diamond 1998; Rainey 1999). Rather, there has to be room for local discretion when meeting organisational requirements (Plsek and Wilson 2001), with the benefit being increased professional responsibility (Hanks and Smith 1999). Through the NUMs' leadership, the organising of the work is made the responsibility of the team and, simultaneously, the inclusion of all the nurses contributed to the building of trusting relationships (Davenport and Prusak 1997; Hall 2001; Glison 2003).

Participation is important because of its role in maintaining an organisational climate of trust, fellowship and ownership, as opposed to a climate of fragmentation and discord. (Zajac and Bruhn 1999: 707)

The participative approach by the NUMs was engaging the nurses to take collective ownership of the work. The development of support, trust and the ownership of work is the enactment of responsibility and teamwork (Ashkenas, Ulrich, Jick and Kerr 1995; Connelly et al. 1999; Sheard and Kakabadse 2000). In other words, the NUMs' actions were embedding the individual-communal practice duality into the teams' unfolding practice. Also, the NUM's words above are highlighting the enactment of the local-global practice duality, whereby the conduct of the CFHNT is shaped and disciplined by her experience and people in other places.

To achieve teamwork vision is needed (West 1990; Lipton 1996; Boonstra and Gravenhorst 1998; Clarke and Meldrum 1998; von Krogh, Ichijo and Nonaka 2000), as professionals have been shown to respond to inspiration not supervision (Nonaka and Takeuchi 1995; Anderson and McDaniel 2000). That is, the role of the team leader is critical.

Managers of nursing and nurses are pivotal not only to shaping the workplace but also to shaping and defining nursing. (Jones and Cheek 2003: 127)

The inclusive and collaborate approach by the current NUMs was reshaping and redefining early childhood nursing in this location. The previous NUM had shaped and defined the experience of nursing such that the current collaborative approach was challenging and difficult for some nurses. As two nurses commented, they were used to being directed as to what to do.

"... we've never been given a choice before, ...I'm not used to this!"

Judy, CNS-EC, Cluster observation 24/9/01

".. well we've never been asked that or had to think about that, it's always been management..."

Ruth, ECN, Cluster observation 15/10/01

The nurses' comments are highlighting the previous separation between the organising and service delivery responsibilities. In this way the nurses' reaction mirrors other workers who have been faced with a similar change in the organisation and enactment of their work (Zuboff 1988).

However, on the CFHNT such a view was not universal. Other nurses were very welcoming and positive about this new collaborative inclusive approach.

"... management we used to have was very much... black and white - this is the problem and this is the solution and very much everyone work on that, that basis as well. So now it's much more - you guys have got to start thinking for yourselves as well - that whole change in thinking is really important to me..."

Alison, CNS-EC, Interview 22/10/01

For these nurses participating in the organising and the enactment of the work was an affirming experience at both a professional and a personal level.

"How could you work like that? You're a professional, you should be allowed to make some decisions, and it's actually now you feel really valued now because you're actually included in decision making, as the professional and a human being..."

Annie, ECN, Informal discussion 5/6/01

The nurses who welcomed the inclusive approach identified in particular two factors that shaped their positive attitude. That is, they identified having worked independently in previous positions and therefore having had the responsibility to

organise and manage themselves, and/or having been through university training which encouraged them to speak out and be actively involved in the organising of their work. They believed that these experiences meant that they embraced being included in organising of the work as a positive opportunity. In this way, allowing people to have an active role and being responsible for their own choices has been shown to develop their capacities and identity (Gilson 2003).

The participation of the nurses while increasing the sense of responsibility for the work of the team and trust between one another, somewhat paradoxically increased the explicit conflict on the team. As a team they now had the opportunity, indeed necessity, to openly discuss and negotiate all aspects of their work. The collaboration while highlighting areas of agreement also identified points of difference, both of which required ongoing negotiation and therefore increased interaction. As will be discussed shortly, the necessity for increased interaction to negotiate their practice drew the nurses into their informal activities.

This section has explored how responsibility became a collective undertaking of the CFHNT through the reorganising and then facilitation of the team. That is, the collaborative community became accountable for their service. To enact their practice, the CFHNT integrated their organising and service delivery activities through formal meetings and informal interactions. The next section will explore these integration activities.

4. Integrating the organising and service delivery roles

This fourth section examines how accountability is enacted by the CFHNT integrating their organising and service delivery roles. The collaborative community integrates these roles and enacts their practice through their formal meetings and informal interactions, and in doing so they share the formal knowledge and practice knowing necessary for providing their service.

There are two parts to this section. Firstly, the “sense making structures” (Choo 1998) - the formal meetings - of the collaborative community are discussed, and then secondly how practice necessitated informal, but ritualised, activities by the community is explored.

4.1 *Sense making structures: Formal meetings*

The CFHNT realised a collaborative community by enacting “sense making structures” (Choo 1998), that is, they utilised their two formal meetings, the team meeting and the in-service meeting, to share responsibility for the organising of the team. Inclusion in organising activities such as these has been found to build commitment and ownership to the work (De Michelis 1997; Worren, Ruddle and Moore 1999).

The team meeting became the place to collectively establish a common purpose for, and approach to, the work of early childhood nursing. The team meeting was used to disseminate and discuss organisational material - memos, notices and administration issues, to monitor the general management of resources - cars, phones and clinical items, and ensure the coverage of clinics and home visits, when staff were away - at meetings, holidays, sick or conferences. At the team meetings determining and interpreting all aspects of the work, including the policies and procedures that impact upon the delivery of the clinical work, became the enacted responsibility of the team.

“.. such as the Area Child and Family Health Nursing Practice Committee which is reviewing policies and developing policies and procedures for child and family health. We circulate them for comment with every nurse, who has to make comment.. some don't make comment, but that's the opportunity to make comment and say no I don't agree with this and give feedback... I try, and I hope I'm involving them in everything, and decision

making on what's going to happen to them. Yes, I think I do that..."

Julie, A/NUM-EC, Interview 25/10/01

In this way negotiating all aspects of the work the CFHNT became a collaborative effort where participation was encouraged, supported and indeed necessitated (West 1990). A collaborative team has been shown to encourage people to take risks and learn (Hoskins, Liedtka and Roseblum 1998), whereby individually and collectively they are rewarded through their interactions and they develop their common knowledge (Smith, Carroll and Ashford 1995). Collaboration does not imply harmony. The CFHNT discussed, debated, agreed and disagreed about all aspects of their practice. What was important was that different views were encouraged, voiced and considered openly. The NUM is also explaining how the team is constructing their collective expertise and being disciplined as they do so. That is, through participating in the reviewing of policies from the Area Child and Family Health Nursing Practice Committee, and developing their own policies and procedures, the CFHNT is developing and aligning their communal practice with their early childhood colleagues throughout the AHS. In doing so their conceptualisation and conduct of early childhood nursing is disciplined and realised through these activities. That is, through their conduct the nurses are demonstrating belonging, locally to the CFHNT, and more distantly to the practice of early childhood nursing within the AHS.

Through the team meetings the CFHNT practice became a collaborative and distributed endeavour, with the enactment of the different, but interrelated, roles the clinical and the bureaucratic. The two roles are significantly overlapping with one another, and together they comprise the nurses' work. Several examples will highlight the point. While all nurses provide the clinical nursing service – the home visits and clinics, one nurse has accepted responsibility for managing the occupational health and safety issues, conducting audits as required by the AHS. Another nurse monitors the physical resources, reordering the physical nursing supplies as necessary. A third nurse acts as the fulltime "intake officer" and two

other nurses – the clinical nurse specialists, provide expertise and resources for breastfeeding problems. In this way, membership on the team became expressed as collaborating in the organising and management of the work integrated with the enactment of the work. The nurses engaged in a common clinical role and distributed the other clinical and bureaucratic tasks across the team; to put this differently, on the CFHNT knowledge was organically distributed across the team (Lam 1997) and knowing shared collectively through their interactions. This has been referred to as the distributive nature of contextual knowledge within a community of practice (Barley 1996), or alternatively, as a “transactive memory system” (von Cranach 1992) where the individuals together construct a knowledge holding system which is larger and more complex than those that make it up.

The CFHNT used their other formal meeting, the weekly in-service meeting, to identify the knowledge and skill areas where they required further professional development. This meeting became part of the nurses’ formal reflection on their work through which they established their own professional development schedule, bringing in other professionals to conduct training on a regular basis. The importation of information and skills through training by professionals outside the community is an action by which the local-global practice duality is realised. This professional development is an important strategy the nurses used to identify and then integrate the knowledge needed for their work and practice (van Geert 1994). Identifying the requirements of the work, the CFHNT identified their skill and knowledge limitations and then took responsibility to address them. This required that each individual nurse be honest with themselves, and their colleagues, about their skills and capabilities; accountability became enacted to each other through this conduct. In other words, this collaborative endeavour meant that the nurses were participating in their own disciplining and control (Poster 1990 in Sewell 1998; Barker 1993; Sewell 1998; Johnson 2001).

The two meetings together provided the nurses with a “sense making structure” by which to enact communal responsibility and accountability.

Shared or participative decision making structures provide a formal mechanism for moving caregivers toward heightened autonomy and accountability. (Schweikhart and Smith-Daniels 1996: 24)

The formal structures engaged the nurses so that their work expanded beyond just providing clinical services to include participating in the defining, organising, managing and reflecting upon their clinical activities, skills and capabilities. To consider this in a different way, the meetings provided a routine by which the CFHNT community undertook communal surveillance and self-governance (Sally and Donaldson 1998). That is,

Control and influence are not exercised through the explicit exercise of power and coercion but are translated into the routine disciplinary practices of everyday life. (Coopey 1998: 367)

The “routine disciplinary practices of everyday life”, that is, the CFHNT meetings are part of the web of tension that unites the nurses into their community across their daily, weekly and monthly activities. The nurses’ collectively discipline each other with the expectation that they will be in a certain place, at a certain time, for a certain purpose. Through their collaboration and participation, or surveillance and discipline, the nurses were learning to enact responsibility and accountability for themselves and one another; they became a collaborative team in practice not just in name, or rather, the CFHNT became a collaborative community of practice.

4.2 *Practice necessitates the informal*

The facilitation of the CFHNT in combination with the formal meetings contributed to the nurses' experiencing a growing sense of ownership and commitment to the work (Porter-O'Grady and Wilson 1995; De Michelis 1997; Hanks and Smith 1999; Worren, Ruddle and Moore 1999). In doing so the nurses became energised because they were actively involved in the organising and enactment of the work (Frost 1999; Lang 2001). Consequently, they actively began to seek out one another around the formal meetings and when delivering their clinical services.

"When you're actually out doing home visits, it's very much an isolated job normally... but it doesn't take you very long here to realise that it's not the right way to be, and so often we will meet for lunch, in between clients, or coffee or whatever, so that we can just sit and not spend a whole day alone... like you've got someone else to talk about things with... like how things are going, or how difficult it is, and they're not necessarily even work issues..."

Sarah, ECN, Interview 11/10/01

As the nurse is describing, their practice necessitated informal activities, and these activities became important conduct by which the CFHNT shared and collectively enhanced their explicit knowledge and tacit knowing. They became the ritualised conduct of the CFHNT. Such conduct has been recognised as important by nurses:

Rituals also transmit traditional knowledge and practices.

(Suominen, Kovasin and Ketola 1997: 187)

The nursing profession has a strong oral and face-to-face culture with a reliance on the practical and routine actions established in the workplace (May 1992; Rose and Parker 1994; Riley-Doucet and Wilson 1997; Suominen, Kovasin and Ketola 1997; Benner, Hooper-Kyriakidis and Stannard 1999). In becoming

ritualised conduct, the informal activities enact learning and order in nursing practice (Brooks 1996; Coopey 1998; Philpin 2002), and the nurses share their collective knowing necessary for practice (Clarke and Wilcockson 2001). Similarly, such conduct has been recognised as important by members in a community of practice; in the language associated with the community of practice theory:

Rituals translate collective 'learning by doing' into 'remembering by doing'. ... Routines, therefore, are an essential building block in any organisation, and fulfil many different functions. They are part of what members manipulate in communities of practice. (Hendry 1996: 636)

The informal interactions contribute to the CFHNT becoming engaged with one another, they comprise part of their shared repertoire and are activities through which the nurses pursue their joint enterprise of early childhood nursing; that is, the informal activities are a resource that contributes to all three dimensions of the CFHNT community of practice. The informal interactions became ritualised conduct that complimented the formal meetings and became a necessary part of the collaborative practice. To put this differently, they began to enact a formal-informal practice duality.

The CFHNT community engaged in three ritual activities - the morning-evening ritual, the lunch ritual and opportunistic interactions. Each will be discussed shortly, but firstly the importance of these interactions for learning, knowing and practice will be highlighted.

In their informal interactions the CFHNT are forging their relationships necessary for practice, as has been noted by Zuboff (1988).

Exchanges over coffee or in the lunch room were as likely to be laced with job talk as social banter. Relationships forged in these exchanges provided future resources in the professional's

information network and helped to create the sense of psychological freedom that motivates and renews professional life. (Zuboff 1988: 276)

The informal interactions construct and provide access to the knowing of the community (Clarke and Wilcockson 2001) and enable relationships of respect and trust to develop (Boonstra and Gravenhorst 1998; McGill and Slocum 1998; von Krogh 1998, 2002; Diamond 1998; Cacioppe 2000; Russell, Calvey and Banks 2003). Trust, as has been noted, is a vital component for the effective functioning of teams, and health services more broadly, and thus enables people to conduct their work (Trahair 1981; Zuboff 1988; Brown and Duguid 1991; Lave and Wenger 1991; Heckscher 1994; Orr 1996; Dixon 1997; Clarke and Wilcockson 2001). To rephrase, the CFHNT were collectively engaging in “learning-as-working” (Brown and Duguid 1991, 1998) activities, where the informal activities became significant and necessitated; the nurses were working without initially recognising that they were learning (Mintzberg et al. 1996; Dixon 1997). The informal interactions have also been called “in-process planning” (Weldon 2000), or alternatively “structured informality” (Pan and Leidner 2003), and shown to be as important as formally planned actions to achieve change.

The nurses’ collaborative practice was reinforced as they recognised the importance of their informal gatherings.

“Pretty important I think. You know you need reassurance because you are out there by yourself, you need to get that bit of reassurance, and also, you know, for your own development as well, because there are so many things to learn. Even in child and family there are just so many different areas of interest... it’s very difficult to keep on track of everything and if you know someone on the team that has a particular interest in one thing you know you can then sort of ask them...”

Lisa, ECN, Interview 5/11/01

The knowledge necessary for practice is distributed across the community and the situatedness of practice necessitates the enactment of a subjective-objective duality. That is, communal experience is drawn upon to enact practice and the individual-community necessitate each other with professional autonomy realised by collaborating and participating within the practice community.

With the practice knowledge possessed by the community as a whole, and not a single individual (Blackler 1995; Lam 1997; Cook and Brown 1999), the interactions are important conduct for socialisation and learning (Kleinman, Seigel and Eckstein 2001), and the nurses are enacting mentoring and leadership for each other (Singh, Bains and Vinnicombe 2002). The importance of such informal activity has been noted elsewhere. Davenport and Prusak (1997) report a Japanese company that now formally requires their workers to spend 20 minutes a day with one another discussing the events of the day and their learning. However, in this location neither the nurses, nor other members of the organisation, traditionally regard these informal activities as work or sites of learning.

Non-formal learning is important but its importance is insufficiently appreciated. (Knight 2002: 234)

Learning has traditionally been regarded as a program or an event, however there is the increasingly accepted view that most learning does not occur in formal contexts (Brown and Duguid 1991; Lave and Wenger 1991; Orr 1991; Wenger 1998a; Eraut 2000). While not labelling their interactions as 'work' the nurses do recognise the importance of having the informal social context to come back to, to construct their knowing within (Brown and Duguid 1991; Lave and Wenger 1991; Orr 1996; Dixon 1997; Wenger 1998a; Becher 1999; Weldon 2000; Thompson, Warhurst and Callaghan 2001; Knight 2002).

"... for me I find the informal important, I get more out of informal than formal, which is why I don't mind when we're outside

drinking coffee, having a cigarette talking about work. Somebody will say something and I'll go gee I didn't know that. I quite enjoy the informal chats... I think that informally you're talking about reality... you know that somebody's just been to a house or had somebody at the clinic and this is what's occurred, so it's occurred then and there..."

Kerry, ECN, Interview 14/11/01

The openness, honesty and trust being displayed by the nurses enables learning to occur (Davenport and Prusak 1997; Riley-Doucet and Wilson 1997; Hoskins, Liedtka and Roseblum 1998; von Krogh 1998; Gilson 2003). Here the four key dimensions of knowledge exchanges - relevance, richness, reliability and relationships - are highlighted (Foote, Matson, Weiss and Wenger 2002). That is, as the practice context is the same, the information is relevant to the nurse and becomes part of her knowing; the exchange is 'rich' in personal experience and shared expressions; the nurse receiving the information knows and can trust the person sharing with her, ensuring reliability and the building of their relationship.

The informal interactions, as described by the nurse above, develop the knowing of the community as by talking practice knowledge is shared.

Practical hands on activity can gain new depths of meaning if it is talked about. (Mercer 1995: 13)

The interactions embed the knowing within the community (Mercer 1995), they emphasise the importance of relationships to enact knowing (Lang 2001) and highlight that learning is a social process (Orr 1990; Lave and Wenger 1991; De Michelis 1997; Brown and Duguid 2001). Cook and Brown (1999) have described this learning process as community members providing "affordances" that scaffold access to knowledge for their colleagues. Alternatively the learning has been defined as "reactive learning" (Eraut 2000), where although the learner may be aware the learning is spontaneous and unplanned. The knowing being shared in the nurses' stories has been labelled "heuristic knowledge" (Collins 1990) and

arises from the improvisation that occurs in practice. Surprisingly this type of collaboration has been labelled by some research as “slack time” (Davenport and Prusak 1997). This is a view that reflects the idea of workers standing around talking about their work as ‘wasting time and not working’. This labelling would seem grossly inappropriate, given that the time and collaboration has been identified as critical for learning and constructing knowledge (Mintzberg et al 1996; Dixon 1997; Hoskins, Liedtka and Roseblum 1998; Lang 2001).

The CFHNT collaborative community’s three informal interactions, or “learning-as-working” activities, - the morning-evening ritual, the lunch ritual and opportunistic interactions - will now be discussed.

4.2.1 *The morning-evening ritual*

The first “learning-as-working” activity is the morning-evening ritual, and as the name suggests, this ritual starts and ends each day. The encounter involves the nurses pre- and/or post- reviewing their day; this activity has been described as “anticipatory and recollective reflection” (Van Maanen 1991 in Clarke, James and Kelly 1996), or alternatively “reflective and prospective deliberation” (Eraut 2000). The two forms of reflection regularly occur within the one gathering, and even by the same one nurse as she moves from the past to the future within the present moment. One nurse summarised the gathering as follows,

“We greet each day, we have coffee in the morning, we communicate what our daily routine is for the day, we talk over cases that maybe difficult...”

Judy, CNS-EC, Interview 19/11/01

At either time of day the nurses gather to have a coffee, a cigarette (if needed) and talk about their day, organisational issues and aspects of their lives - partners, children, pets and the big and small events therein. The morning ritual

is often split with some nurses inside in the early childhood room, while others – ‘the smokers’ – are outside the building. One day the inside group is larger than the other, and then the next the numbers can be reversed; there is an ebb and flow between the groups depending on time of arrival, conversations struck-up and the weather – not surprisingly the cold, heat or the rain forces people inside. The evening encounter is similar to the morning one, however in coming after the cluster meeting - a further formal gathering instituted by the nurses and explained shortly - this evening ritual tends to include most, if not all of the nurses prior to their departure from the centre.

4.2.2 *The lunch ritual*

The second “learning-as-working” activity is the lunch ritual. The nurses encourage each other to organise their day so they can have lunch together, with the majority doing so on a regular basis. The workload a nurse has determines where and whom she meets, with some gatherings occurring at the community health centre, others in a local shopping centre or occasionally in a park. The lunch ritual is similar to that which begins the nurses day, with the nurses meeting to share lunch, discuss their morning and preview their afternoon - seeking assistance, offering ideas or just sharing stories about work and family.

4.2.3 *Coincidental interactions*

The third “learning-as-working” activity is the coincidental interactions, which happen in a number of ways – the brief interaction, a short break or the afternoon interaction.

“The interactions happen in passing, or in the tea room, or the nurses’ room or when we’ve got a bit of time after our visits... I suppose every day there’s a chance, like... even if you’re just

making a cup of tea or something... I work Wednesday so there's generally an in-service every Wednesday afternoon, so if we're waiting for the in-service to start or it gets cancelled or something then we end up with a little bit of time.. to talk, to interact.."

Lyn, ECN, Interview 3/10/01

As the nurse explains, the interaction can be the unexpected "brief interaction" that occurs before or after work activities. The coinciding of time and place together provides a short period to exchange greetings, ask a clinical practice question and share a burden, or a laugh, while organising or waiting for the next activity.

Another form of this interaction is the "short break"; this is when a nurse seeks out whomever is around to share a coffee and/or smoke with during their day. When together they discuss and reflect upon the events of their day, as they have been or what they are preparing for. They swap stories and experiences, insights and uncertainties, offering each other emotional support and practice ideas.

Then finally, there is the "afternoon interaction", which occurs at the centre from about 3pm onwards in the early childhood team room. Usually this interaction involves two or more nurses, when their visits or other meetings have been cancelled or shorter than expected. While completing their paperwork, reading organisational or professional material, or organising visits for the following day the nurses engage in discussion; they do and they talk simultaneously. They reflect, analyse and explore their work events and private lives – visits from the day, work memos and other organisational documents, and/or family-life happenings.

This concludes this fourth section, which has explored the role the formal meetings and informal interaction have played in realising the collaborative

community. Through these activities, the CFHNT have enacted collective accountability and shared their practice knowing.

The following and final section of this chapter details the collaborative practice of the CFHNT community.

5. The CFHNT collaborative community enactment of accountability

The final section of this chapter discusses the collaborative practice of the CFHNT, and in doing so describes the collaborative community enactment of accountability. This description highlights how learning, knowing and practice within this context became collaboratively established and maintained.

The section has two parts. Firstly, the collaborative practice of the CFHNT is discussed. Then secondly how accountability is instituted through a further “sense making structure” (Choo 1998), a CFHNT ‘cluster meeting’, is detailed.

5.1 The CFHNT collaborative practice

The CFHNT assumed responsibility for providing the early childhood service, inheriting the “well baby clinics”, spread across the sector, from the generalist team. Some clinics are organised on an appointment basis, while other clinics are ‘drop-in’ clinics with the mother and baby seen in order of arrival. Through these clinics, the nurses provide a physical health check for newborn babies, with the purpose of the check being to monitor the baby’s growth and development. The nurses advise parents to take a sick baby to a doctor. The physical health check covered the growth parameters – length, weight and head circumference, the head and fontanelles, the general appearance, reflexes and body symmetry of the baby including examining the face, arms, hands, hips, legs and feet. If, as a

result of the physical examination, the nurse identified any concern with the baby's development she would recommend that the mother take the baby to a doctor.

The introduction of home visits for Families First expanded the physical location of the nurses' clinical practice. They were now to visit families in their homes, as well as providing a service in the clinic. For the nurses to conduct their practice in the families' homes required them to construct a transportable clinic. The file is paper and cardboard so that presented no difficulty in transporting, however the clinic is composed of a number of large physical items necessary for weighing and measuring the baby. To enable the home visits to occur a transportable clinic was constructed – lightweight scales, a plastic measuring mat, paper tape measures, gloves, disinfectant wipes and sterilising gel were placed in a bag and combined with the AHS Health Record, a car, mobile telephone and a early childhood nurse; in this way the early childhood service became mobile. This mobility meant the CFHNT could provide the same service to all families in any location. The nurses no longer became constrained by having to be in a specified health building to enact early childhood nursing. Instead, every home became a potential health clinic.

The CFHNT began to provide a service at the same time as utilising their formal processes to enable them to organise, manage, review and reflect upon their work, including considering how to implement home visiting as per the Family First requirement. They utilised their team meetings and in-service meetings to explore a range of questions: What was the purpose of first baby visits in the home, instead of the clinic? What could they do and how would this help them understand this baby/ mother/ family more fully? How much time should a home visit take? What resources did they need for a clinic and home visit? How did a home visit integrate with the clinics? They examined the artefacts of early childhood nursing – the AHS policies, procedures and paper file, the 'Health Record', with the Personal Health Record, 'the baby's blue book' - and they

reflected upon the skills and knowledge necessary to use these items effectively in clinical practice. In addition to their formal meetings, the CFHNT began to seek out each other and discuss work, and social, matters at other times. They engaged in informal interactions that became an important ritualised part of their practice.

The NUM facilitated the CFHNT so that the organising and enactment of the work became regarded as the responsibility of all the nurses to collectively negotiate and determine. Through their collaboration and participation the nurses were learning to become their own, and each other's, self-managers; the nurses were collectively enacting accountability, rather than having accountability imposed upon the team. The nurses were enacting a collaborative community in which they were actively participating in their own disciplining and control, practicing self-management rather than having control and direction imposed upon the team (Poster 1980 in Sewell 1998; Barker 1993; Sewell 1998; Johnson 2001). The nurses were willingly enacting the individual-community, subjective-objective, local-distal and formal-informal practice dualities.

The CFHNT constructed a common understanding built upon a reinforcing positive cycle, whereby the informal interactions supported the formal collaborations that in turn lead to increasing willingness for more informal gatherings and so on (Dixon 1997; Hall 2001); the formal and informal together created trust (Sitkin 1995 in Brown and Duguid 1998). Together the community constructed a common understanding of appropriate practice.

However, the action takes place on the basis of a shared understanding of what is appropriate nursing practice. Many of the technical aspects of practice, the life-world of nursing and many aspects of the social, economic and political context of practice will be conjointly held by other nurses. There will be a common understanding. (Clarke, James and Kelly 1996: 175)

Through their collaboration the CFHNT constructed and enacted a common understanding, work role and practice routine. The CFHNT collectively organised and negotiated their work to be that if a nurse has a clinic then one home visit is expected. If they have no clinic then four home visits are to be conducted, with the possibly of a follow-up visit included, depending on the complexity of the issues involved. This socially negotiated understanding of their work, which incorporated their formal meetings and informal times together, structured the nurses' day, week and month. This routine of the community embedded learning providing order to their work, in temporal, spatial and social dimensions (Hendry 1996; Suominen, Kovasin and Ketola 1997). That is, in their collaborative community through the practice dualities the conception and enactment of early childhood nursing became increasingly standardised.

Through collaborating the nurses enacted observation, listening, discussion and reflection to determine appropriate bureaucratic actions and nursing practice (Benner, Hooper-Kyriakidis and Stannard 1999; Berragan 1998).

"It's that camaraderie and support that you feel when, other people are around and the fact that you know you can come back and discuss stuff with other people. That the team is not in anyway going to put you down for what you've done. They might suggest better ways of doing things, but they are not likely to sort of laugh or you know make you feel like a fool cause you haven't done something right. They're more likely to say yeah you could have tried this as well, or you could have done that, or have you thought of this... so its more sort of positive feedback..."

Sarah, ENC, Interview 11/10/01

The words of the nurse highlight an important aspect of the early childhood enterprise. That is, the freedom, indeed expectation and necessity to collaborate. Within this community an individual nurse does not have to know everything, seeking assistance is legitimate practice. As the nurse is describing, they are

enacting their work and then discussing their work together; in this community participation involves listening as much as speaking (Brookfield 1993).

The discussion of cases is a regulation strategy by which the nurses compare their work against the conduct and norms of their practice community. During the interactions the nurses alternate between talking and listening, seeking and giving advice, resulting in the nurses enacting conforming conduct (Manias and Street 2000a). They are engaging in “confessional” practice that enacts a communal identity, that of autonomous and self-regulating professionals (Gilbert 2001; Gordon 2002). In other words, the nurses are enacting communal surveillance and self-governance. The nurses’ actions can be understood as a process of ‘human auditing’, that is, verbally, visually and interactionally representing, monitoring and regulating their collective practice. This action is the process by which clinical practice and how to participate within the community is learnt and integrated. Interacting in this way is not a new experience for the nurses as such participation and self-reflection is a method used with nursing students to promote autonomy and self-direction (Riley-Doucet and Wilson 1997).

Through the collaboration the nurses are constructing “know-how” to compliment their “know-what” knowledge of nursing (Ryle 1954).

Narrating work-related episodes to one another creates an environment in which the ties of community are reinforced, collective memory is enriched and individual knowledge is enhanced. (Tsoukas and Vladimirova 2001: 986)

The CFHNT knowing and learning occur through utilising the resource of their practice experience (Rose and Parker 1994; Mercer 1995; King and Rowe 1999). The stories engage the nurses together, provide a repertoire and comprise their enterprise, that is, the stories realise all dimensions of their community. The collective continual revisiting of topics that enables the learning of ideas and

practice, where one informs the other, has been named a “hybrid” process (Bhabha 1990), or alternatively a “spiral sequence” (Bruner 1961). These actions involve the continuous interplay, or “mimesis” (Taussig 1993), whereby collaborative watching, discussing, listening and doing enfold ways of being into a community. Collectively the CFHNT are integrating their explicit knowledge and constructing their communal tacit knowing, resulting in the enactment of a collaborative practice; this is the shift in understanding from an individual focus to a collaborative team (Katzenbach 1993). The formal meetings and informal interactions provided multiple opportunities for knowledge sharing (Pan and Leidner 2003) and together the nurses engage in “practice development” (Clarke and Procter 1999). These actions have been also named the “art of nursing” (Rose and Parker 1994), and more recently the “construction of professional craft knowledge” (Titchen 2001; Titchen and Esser 2001a, 2001b).

Enabling this collaboration has been electronic technology (Junnarkar 1997). The mobile telephone, and more recently email, has added a further dimension to the physical work space of the nurses (Frissen 1999; Tellioglu and Wagner 2001). The technology has enabled the nurses, who are at times dispersed on any given day and across the days of a week, to interact; they are “enabling artefacts” (De Michelis 1997). The CFHNT workspace has expanded to become physical and virtual, allowing the nurses to collaborate and participate independent of the time and physical conditions that constrain them. In this way, the technology is being used to bridge a physical distance or absence (Brown and Duguid 1991; Frissen 1999; Tellioglu and Wagner 2001).

“..it’s nice to have someone to call if you’re in a visit and you’re not sure about something. To be able to just pick up the phone and ring someone and say, look you know, what do you think? or I’m not sure on this one, what do you think?... you know, to get someone else’s advice or opinion...”

Sarah, ECN, Interview 11/10/01

This collaboration via the telephone is an example of the nurses' enacting a "coaching" form of leadership with one another (Goleman 2000), where together they are being a resource and support for one another, engaging in collective learning (Benner, Hooper-Kyriakidis and Stannard 1999). As noted, this collaborative conduct, also labelled "mentoring", has been shown to transfer knowledge (Singh, Bains and Vinnicombe 2002); Polanyi (1967) referred to the acquisition of knowledge from another in this manner as "comprehension".

5.2 *Enacting accountability: The cluster meeting*

Increasingly the practice of the CFHNT became the doing, that is, the organising and delivering of the service, and talking about the doing of the work. This practice could only be successful when supported by activities, and technology, that developed and maintained their relationships (Rebentisch and Ferretti 1995). However, the technology is only a supplement to the face-to-face interactions that enable the sharing of their explicit knowledge and tacit knowing, not a replacement for such interactions (De Michelis 1997; Tyre and von Hippel 1997). As Lang (2001: 45) has commented:

More generally, knowledge is created and recreated as practitioners see the logic of each other's thinking in communities brought together by common interests. Knowledge creation requires frequent, informal, direct, face-to-face personal interaction.

First and foremost, the enactment of practice required time together in the same physical location, to continually negotiate a common understanding (Van Maanen and Barley 1984; Mintzberg et al. 1996; Araujo 1998). The CFHNT identified that to maintain their practice knowledge they needed further "frequent, informal, direct and fact-to-face personal interaction". They found that their nursing practice - the majority of which was in isolated single practitioner clinics - did not

allow for knowledge creation and their interaction in their formal meetings were insufficient in this regard. Recognising the value of their informal interactions for learning and support, the CFHNT took responsibility for their own learning (Fook, Ryan and Hawkins 2000) and enacted a daily meeting that they called their 'cluster meeting'.

"...to actually sit and talk about it formally like that, probably 2-3 months I suppose, formally, everyday, but we've all done it informally as long as I've been here, because you come back and sit down for a cuppa, and talk about your day... I had this client and I did this and this, but I felt this wasn't right, or this happened and that happened... and we all sit around and debrief probably at least once a day... but we've always done it, but not in such a formal way..."

Sarah, ECN, Interview 11/10/01

The nurse is explaining that the formal organising developed from their informal interactions (Hall 2001). This interaction by the nurses is similar to that of their nursing colleagues in other locations. Meetings such as this have been called "collaborative peer learning groups" (Clarke and Procter 1999), and they provide the opportunity for situated learning (Benner, Hooper-Kyriakidis and Stannard 1999; Clarke and Wilcockson 2001), called "learning to do" (Maudsley and Strivens 2000). The cluster meeting can also be understood to be similar to the "handover meeting" on a ward in a hospital. While generally not transferring cases between the nurses as occurs with a change of shift, although the equivalent does occur at times, the meeting provides a time and place for a display of professionalism. As Parker and Wiltshire (1995) note the handover is a significant site for the oral transmission of nursing knowledge about specific patients, and as "a significant site at which nurses articulate and communicate their practice and sense of professionalism". The CFHNT in instigating their 'cluster meeting' enact accountability for their community and service.

Further still, the formalisation of informal interactions, as has occurred with the CFHNT, has occurred in other organisations. Increasingly workers are being asked not just to do their work but also be able to be able to talk about doing their work (Du Gay 2000). This has been referred to as the “textualisation of work” (ledema and Scheeres 2003) and represents a shift from knowing and doing work, to include the talking about the knowing and doing of work. People are being placed in situations where they have to be able to talk to their colleagues about what they do, how they do their work and how the work may be undertaken more effectively.

Degeling, Kennedy, Hill, Carnegie and Holt (1998) have noted that nurses regard interactions such as the cluster meeting as beneficial for practice.

...respondents from a nursing background proceed from a more collectivist perspective and hence were prepared to entertain the view that strengthening the institutional and/or organisational structures and practices would have a positive impact on clinical practice. (Degeling et.al. 1998: 111)

The nurses here, as in other places, recognised a strengthening of their team structure can positively impact on clinical practice. They willingly engaged in collaboration and reflection together, activities that are seen as necessarily dovetailing together.

Organisational cultures which stress collaboration as a way of working are likely to encourage reflective practice. (Clarke, James and Kelly 1996: 179)

The cluster meeting became an organisationally recognised forum for the nurses to collaboratively reflect upon their practice, providing opportunity for a daily debriefing, support and workload management; the meeting became part of the “sense making” strategy of the CFHNT (Choo 1998). The meeting provided time and space for the CFHNT to discuss, reflect upon and capture the communal

learning from their daily practice (Clarke, James and Kelly 1996; Ford and Ogilvie 1996; Hoskins, Liedtka and Roseblum 1998; Rigano and Edwards 1998; Fernie et al. 2003), predicated upon face-to-face communication (Larkin and Larkin 1996; Lave and Wenger 1991; Wenger 1998a).

“..we sit around every afternoon, listening to what other people say about a client they’ve had and what they have done and what they thought was the right thing to do. Sometimes you listen and think, ahh I never thought of that, yeah that’s a good point or yeah, I’ll remember that one for next time or... and the other way too - gee I wouldn’t have done that, that doesn’t feel right or doesn’t sit right with me about something they said, or something they’ve done or so I mean that’s a positive and a negative...”

Sarah, ECN, Interview 11/10/01

As the nurse is indicating agreement and disagreement about issues is continually being negotiated. In this community harmony and conflict are the two sides to collaboration. Through their participation the nurses are “negotiating meaning” (Wenger 1998a), also called a “way of seeing” (Daft and Weick 1984) or “perspective making” (Boland and Tenkasi 1995), and in doing so they are enacting their collaborative practice (Van Maanen and Barley 1984; Brown and Duguid 1991; Lave and Wenger 1991; Araujo 1998; Wenger 1998a).

The listening by the nurse is an important form of self-regulation and surveillance, a demonstration of competency and control to both one-self and others (Gilbert 2001). This listening, reflecting and rehearsing the future encounter by the nurse to herself is the self-regulation of her practice against the community norms; she is enacting an “inner supervisor” (Todd and Freshwater 1999). Participation within the nursing community then necessitates shifting this internal dialogue into the communal space of the meeting. When the nurse does this, her actions and words contribute to the nursing community’s understanding of practice. In doing so, she demonstrates to her colleagues that she knows how

to practice competently and participate within the community. The other nurses, for their part also display, or reinforce, an example for others to follow. Together their actions serve to regulate the conduct of each other and comprise participation within the community.

When an individual nurse acts differently to the negotiated norms of the community and the community becomes aware of such conduct, the community collectively acts to bring the divergent individual into line with expectations. For example, on one occasion a nurse could not attend her clinic as she normally did and a colleague covered the clinic for her. During the course of running the clinic several parents informed the relieving nurse that the nurse who was away allowed them to book appointments for the clinic; these were for the major health checks as recommended by the Health department and detailed in the baby's Infant Health Record. The practice of booking such appointments was not part of the negotiated norms of the community. That afternoon the relieving nurse raised this issue during discussions with her colleagues in the cluster meeting. Over the following days, the issue became a point of discussion within the community, including with the particular nurse, and in an informal way was drawn to the attention of the NUM. The outcome was that the community confirmed their practice of not booking appointments and the nurse was informally, that is by her colleagues, and formally, that is by the NUM, directed to change her conduct in this regard. Incidents such this became part of the shared history, or stories, of the community and served to regulate the conduct of the community.

The learning through this forum is important because the people involved are reflecting upon their own and each other's experiences (Boud, Keogh and Walker 1985; Pentland 1995; Fook, Ryan and Hawkins 2000). As noted in the previous chapter, workers' listening to others, and also describing stories from their day, has been called the sharing of "war stories".

In telling these stories an individual contributes to the construction and development of his or her own identity as a

worker and reciprocally to the construction and development of the community in which he or she works. (Brown and Duguid 1991: 47)

Such collaboration has been noted as a significant source of learning in nursing (Berragan 1998), conducive to knowledge generation and transfer (Ruggles 1998), and as a strategy by which a community constructs and develops their tacit knowing (Boesch 1992; Wenger 1998a; Brown and Duguid 2000; Tuomi 2000). This conduct has been described as “knowing” or “knowledge working” (Blacker 1995; Lang 2001), alternatively this knowing has been described as “embedded knowledge” (Badaracco 1991), that is, knowledge that is highly embedded in complex social interactions and team relationships within organisations. The interaction acts to “socialize” the individuals involved and encourage knowledge sharing through interpretation and subsequent understanding of each other’s positions (Kemmis 1985; Fernie et al. 2003). In other words the learning and knowing is enacted through, and because of, the connections between people (Dixon 1997; Hoskins, Liedtka and Roseblum 1998; McDermott 1999a; Boreham 2000; Lang 2001).

An additional important element that furthered the collaborative community is the “gift exchange” (Bourdieu 1998) that characterised the interactions of the CFHNT, that is, the extraordinary conduct that unites and reinforces the bonds between members. For the CFHNT this gift exchange was a number of simple but very important activities. The nurses would regularly have coffee, a cigarette, and/or lunch together, and where possible, they would celebrate each other’s birthdays, having lunch or a special afternoon tea together. Frost (1999: 130) has noted the importance of such actions:

People act with empathy and with the intention to help others grow so that they and the organisation may prosper. It is about connections between and among people.

Through the learning-as-working activities and the constant sharing of stories and emotions about their lives, families and work experiences, they established connections with each other; they built an emotional community (Mirvis 1997) and displayed “care” (von Krogh 1998, 2002). While simple, the actions are symbolic of trust and respect, and such exchanges, of both stories and gifts, are necessary to turn a group into a community (Bourdieu 1998).

Through these activities the nurses’ collaboratively organised, provided and reflected upon their clinical services; they constructed a practice by integrating task, technology, structure and people (Aungles and Parker 1992; Weldon 2000); in doing so they integrated their organising, knowing and learning (Bloor and Dawson 1994). The ongoing collaboration shifted the accountability from the nurses as individuals to the nurses as a collaborative team, and they became dependent upon each other for their learning and practice.

“.. the team is good, there is respect for the experience that others have. At cluster people use each other’s experience, they draw on other’s experience and knowledge, it’s supportive, positive...”

Regina, ECN, Informal discussion 7/8/01

The nurses are collaborating and participating to develop knowing and expertise for themselves and each other (Clarke, James and Kelly 1996; Benner, Hooper-Kyriakidis and Stannard 1999; Berragan 1998; von Krogh 1998; Wenger 1998a, 1998b; McDermott 1999b; Nickols 2000). The outcome of the ongoing collaboration was the CFHNT collectively expanded their knowing, standardised the use of their shared repertoire and skills into their practice, and, as will be discussed in the following chapter, expanded their clinical role with the families. The practice of the early childhood community became more complex and realised with and through one another; accountability expanded from an individual focus to become the practice of collaborative community.

6. Conclusion

This chapter has explored the third aspect of the technologisation of practice, the integration of the organising and service delivery roles by a collaborative community. In doing so, the community has assumed ongoing accountability for their practice. This exploration has shown how the learning and knowing of the nurses, or their early childhood expertise, is realised through the practice dualities, which at the same time disciplines and controls their actions. Through the individual-community, subjective-objective, local-global and the formal-informal dualities the CFHNT enact a collaborative community and hold each other accountable in practice.

The CFHNT achieved a collaborative community through three actions. Firstly, the reorganising of the generalist team led to the construction of an accountability context, a new organisational structure that is the CFHNT. Then secondly, the reorganising and facilitation of the team led to the team collectively assuming responsibility for their service. Thirdly, the integration of the organising and service delivery activities, through the formal meetings and informal interactions, realised the enactment of the CFHNT collaborative community. In short, the team became a community of practice as they developed trust, emotionally engaged with one another, formed a shared history of learning, constructed and enacted overlapping roles, and collaborated to pursue knowing. In doing so, the CFHNT became a community, enacting their accountability relationships and sharing their knowing, and replaced explicit control with subtle control through collaboration and participation. That is, through their increasingly intense collaboration the nurses' conceptualisation and enactment of practice became increasingly 'standardised', and as such, is part of the technologisation of practice in this location.

The CFHNT collaborated to enact a community of practice - their joint enterprise is the early childhood service and through their mutual engagement they

constructed a shared repertoire, including formal meetings and informal interactions, that enabled them to enact their practice. The three formal meetings and three informal gatherings are the conduct by which the nurses engaged with one another, they comprise part of the shared repertoire, and are an aspect of the joint enterprise of the community. In this way, as explained in chapter four when discussing the theory of a community of practice, they comprise part of the resources that simultaneously realise all dimensions of the community.

In the next chapter the fourth aspect of the technologisation of practice is discussed, that is, the collaborative community assemblage and/or appropriation of further technologies into practice. The discussion will show how through these technologies the CFHNT community strengthens the local and the extended relationships of accountability, and expands the boundaries of practice. In doing so, the technologies enable the nurses to govern the wider population. Moreover, through the technologies the nurses' practice becomes open to the governing by other people, but importantly, they also provide the nurses with an expanded discourse to allow them to engage in the collaborative self-governance of their own community. That is, the technologies enact discipline while realising the nurses' expertise.

Chapter Eight: Enacting discipline and expertise

“...seeing new mothers, checking the babies health and physical condition, discussing feeding, discussing breastfeeding, discussing any issues or concerns they might have with their babies, assessing their emotional state, I suppose with the EPDS... and then exploring that with them to see if there is anything that we can do for them that would be of any assistance..”

Sarah, ECN, Interview 11/10/01

Nursing as a profession and a discipline is inherently political because it deals with biological existence and generates knowledge about it. Shaping the population for economic and social purposes demands supervision and intervention over biological processes. Hence, nursing is a constitutive element of governmentality because it takes part in this management. (Holmes and Gastaldo 2002: 560)

1. Introduction

The fourth and final aspect of the technologisation of practice is examined in this chapter. That is, the collaborative community assemblage and/or appropriation of further technologies into practice thereby strengthening the local and extended relationships of accountability and expanding the boundaries of practice, is now examined.

This examination follows after exploring the ongoing enactment of accountability by a collaborative community, the third aspect of the technologisation of practice, in the previous chapter. Recall also the initial two aspects of the technologisation of practice discussed earlier, which are, firstly, standardising the

conceptualisation and enactment of practice through constructing a multi-dimensional practice resource within a community of practice, and secondly, the mobilisation and refinement of the multi-dimensional practice resource to realise a practice network involving extended relationships of accountability.

This chapter continues the empirical focus on the CFHNT, who provide the early childhood services in community health for the Liverpool sector of the SWSAHS. The discussion will show how the CFHNT community utilised tools and artefacts which saw them formalise and standardise their practice in line with their colleagues in other locations. To express this in my terms, the CFHNT utilised technologies to strengthen their extended relationships of accountability and expand the boundaries of their practice. In doing so, the ongoing enactment of the CFHNT collaborative community involves the enactment of the practice dualities of individual-community, subjective-objective, local-global and formal-informal. In enacting their practice dualities the CFHNT enacted a further duality, involving governmentality-communal self-governance. That is, governmentality (Foucault 1979; Rose 1996, 1999) and governance (Rose 1999; Courpasson 2000; Flynn 2002) are drawn upon to explain the discipline and expertise enacted by the participants of a collaborative community of practice.

The chapter begins by discussing the notion of assembling (Rose 1996) and appropriating (Suchman 1987) technologies for practice. Then the basic relationship of accountability enacted by the CFHNT is outlined in section three. In section four, how the CFHNT assemblage and appropriation of the 'organising artefacts' and 'transforming tools and artefacts' strengthened the extended relationships of accountability is discussed. Finally, in section five, the 'therapeutic early childhood nurse' enacted by the CFHNT is discussed. This discussion involves detailing the dual alliance, mediated via the political strategy of Families First, the CFHNT realised with firstly the State and AHS, and secondly the parents-families the service is provided for.

2. Assemblage and appropriation of resources

This section discusses the actions of the assemblage and appropriation of technologies for practice, and notes how through such actions the CFHNT have simultaneously enacted both governmentality and self-governance.

The capacities and power of the nurses comes through their resources, that is, through their tools and artefacts that are their administration and clinical policies and procedures, and clinical tools and artefacts. These resources are “technologies” (Rose 1999). Recall the explanation of a technology was that:

(A technology) is any set of social practices that is aimed at manipulating the social or physical world according to identifiable routines. (O'Malley 1996: 205)

The resources of the CFHNT are utilised to organise, structure and make routine the practice of early childhood nursing. The CFHNT, through the assemblage (Rose 1996) and appropriation (Suchman 1987) of such resources, simultaneously realise their collaborative community and enact their increasingly complex work activities. Rose explains assemblages as follows:

Subjects, I will argue, might better be seen as ‘assemblages’ that metamorphose or change their properties as they expand their connections, that ‘are’ nothing more or less than the changing connections into which they are associated. (Rose 1996: 172)

and also,

They are rather webs of tension across a space that accord human beings capacities and powers to the extent that they catch them up in hybrid assemblages of knowledges, instruments, vocabularies, systems of judgement and technical devices. (Rose 1996: 38)

The CFHNT community have constructed and expanded, or alternatively technologised, their practice through their use of tools and artefacts adopted from the State and other colleagues in other places. Enacting their practice the nurses collectively utilise their shared resources, which involve those of the State - the Infant Health Record, the SWSAHS - authority to practice as early childhood nurses in this location, community health - physical building, policies and procedures, and early childhood nursing - clinical resources, artefacts/ forms including the IBIS. To consider this from another angle, these resources are “lines of force” (Rose 1999) that separate out and define early childhood nursing from primary health nursing and nursing within the hospital setting.

This is a matter of defining boundaries, rendering that within them visible, assembling information about that which is included and devising techniques to mobilise the forces and entities thus revealed. (Rose 1999: 33)

The assemblage of resources by the CFHNT collaborative community has rendered the practice of early childhood nursing visible and realises the expertise of the nurses. In combination with their local resources, their formal meetings and informal interactions, the “lines of force” become appropriated, or “ready-to-hand” (Suchman 1987). That is, the nurses learn to use the resources so that they become an extension of themselves, and in doing so essential for practice. An example will highlight the point.

A nurse when undertaking an assessment of the family records the details on the clinical artefact that is the IBIS. The IBIS is a technology that provides a structure and issues to be explored in the clinical interaction, and when completed the IBIS artefact makes visible the specialised practice of early childhood nursing. When initially used the nurse is focused on the IBIS form, following the order of questions, reading each question and completing the answer correctly in the appropriate space. As the nurse gains more experience with the assessment process – simultaneously interacting with the form and the client – a flexibility

and spontaneousness enters the clinical interaction. The form is completed as a part of the interaction with the focus being the interaction and information being discussed. The change in focus represents the form having become appropriated into the nurse's clinical practice. Correspondingly, practice comes to be the integration of talking and writing, and doing one without the other is inconceivable.

The tools and artefacts being assembled and appropriated in this way has implicated the CFHNT into the "government of conduct" (Rose 1999).

Here, as elsewhere, government is not a matter of the realisation of a programme so much as the complex construction of assemblages that will link up rather general ethical rationalities to very specific, local, and technical devices for the government of conduct. (Rose 1999: 190)

As will be discussed, taken together this "complex construction of assemblages" is "linked up" with the State program of Families First, which involves the nurses' home visiting families, thereby shaping the conduct of both the nurses and families. This has been possible as the assemblage and appropriation of further technologies has made early childhood nursing technical, visible and therefore accountable. Further still, these technologies have given the nurses the capacity to conceptualise and construct their practice community's own knowledge and discourse, that is, to pursue collaborative self-governance. To put this another way, as the nurses have assembled and appropriated more and more diverse tools and artefacts they, their practice, their networks and relationships of accountability have changed.

The next section now explores the basic relationship of accountability enacted between the CFHNT, the AHS and the State.

3. The basic relationship of accountability

This third section outlines the basic relationship of accountability between the CFHNT, the AHS and the State. This relationship provides the foundation upon which the extended relationships of accountability are strengthened and practice is further technologised. There are two parts to this section. Firstly, the basic relationship of accountability is described and then secondly, the technology, that is the performance management process, by which this accountability relationship is entrenched, is explored.

3.1 Basic appropriation of resources

There is a basic appropriation of AHS resources required to enable the nurses to conduct their work, whether that be as members of the generalist team or CFHNT. To put this differently, the appropriation of the AHS resources constructs the basic relationship of accountability between the nurses and the AHS.

For the CFHNT members to be able to call themselves 'SWSAHS early childhood nurses' requires that they appropriate the boundary defining and legitimation resources of the AHS. That is, the AHS marks out a geographical territory and defines the conditions upon which an individual can call himself or herself an organisational member. To this end the 'staff identification tag', worn by all organisational members, symbolises, making visible and mobile, the organisation and boundaries of the AHS; for example Mary Smith, Community Health Nurse, Liverpool Sector SWSAHS. In addition, to be able to enact early childhood nursing practice requires the nurses appropriate the physical space of the community health centre. Through participating within their collaborative community they learn how to utilise this space and become a competent practitioner. In doing so, the nurses become further enmeshed in a system of

power and control as represented by their competent use of the office space and clinic rooms.

In this way, the boundary defining and legitimation resources of the AHS, and physical space of the community health centre regulate and shape the conduct of the nurses, and in doing so defines them as early childhood nurses in community health. The resources are “lines of force” (Rose 1999) that construct the parameters and space of the AHS and, more specifically, that of early childhood nursing practice in community health. To consider this for a moment in my terms, the boundaries, identification tag and space of the community health centre realises the local-global and individual-community practice dualities. Through these “lines of force” the nurses’ local enactment of their practice is linked to more global entities, that is, they are identified as practitioners who simultaneously are accountable to a local team, a large health organisation and a wider professional community.

This concludes the outline of the basic accountability relationship. A longer discussion of this issue can be found in appendix six. This basic accountability relationship is entrenched through the enactment of the process of professional development. This point is now explored.

3.2 Professional development

The career aspirations of the CFHNT and the organisational management of staff come together through the “Professional Development Policy and Guidelines”. Their intersection brings into alignment the nurses’ career aspirations with the work requirements of the organisation and the State.

The technology by which this alignment is enacted is the ‘Performance Management Process’, which is a standardised process used to shape the

conduct and aspirations of all staff. The process is inscribed in the “Performance Management Policy and Guidelines” published by the NSW State Government Premier’s Department in 1998.

The introduction of a performance management system is seen as an important means to improve productivity, efficiency and effectiveness of public sector organisations. Performance management is a principal tool in achieving corporate objectives in that it links those objectives with employee goals and achievements. (SWSAHS Introduction to Performance Management 1999: 2)

The performance management technology is a positive expression of power that fabricates and unites the individual, the organisation and the State in a common direction; the nurse is incited to have professional goals and the organisation is the place to fulfil these (Coopey 1998; Gordon 2002; Holmes and Gastaldo 2002). The nurses enter into this process as participation enables them to undertake, with the organisational resources and the State’s blessing, further professional development, or alternatively, the ongoing development of expertise. Such conduct aligns the nurses with their wider professional association.

The Association considers child and family health to be a specialist area of nursing practice requiring advanced nursing skills. The quality and efficiency of nursing care provided to the client family is dependent on the level of competency of the nurse and it is for this reason that rigorous preparation and continuing professional development are considered essential. (CFHNA - Child and Family Health Nurses Association - NSW 2001: 4)

The requirement to participate in ongoing training and development is an expectation the nurses now hold of themselves and each other as ‘professionals’, and is appropriated from the Child and Family Health Nurses Association. As a result, the State, through the organisation’s performance management

guidelines, becomes aligned with the nurses' professional ambitions; thus enabling the State to act at a distance on the conduct of the nurses, while contributing to and preserving their professional autonomy (Rose 1999; Gilbert 2001).

When we are governed, when our behavior is managed, directed or conducted by others, we do not become the passive objects of a physical determination. To govern individuals is to get them to act and to align their particular wills with ends imposed on them through constraining and facilitating models of possible actions. Government presupposes and requires the activity and freedom of the governed. (Burchell (1991: 119) in Purkis (2001: 143))

Through the technology of performance management, the nurses survey and regulate their own and their colleagues' conduct participating in an annual performance review. This performance management process links disciplinary and care strategies together. This linking is achieved through the CFHNT using a standardised technique - policy, questions and forms - to review and reflect upon their work during the year gone by and their ambitions for the year ahead. Informally the CFHNT discuss their goals, comparing and regulating their conduct and expectations against their community's interpretation of their professional norms. A NUM and an individual nurse then examine the nurse's practice against the norm for an early childhood nurse, as outlined by the professional association and interpreted and enacted by the local practice community within the AHS. The nurse undertakes self-examination, introspection and confession to reveal herself to herself and her manager. In doing so the NUM is serving as a guide for the nurse and is seeking to achieve their normalisation within the population of early childhood nurses (Holmes 2002; Holmes and Gastaldo 2002). Through this activity and relationship, the nurse manager is exercising "pastoral power" that produces savoir, or knowledge, about the nurse, the governed subject. This knowledge is inscribed on the performance management form, formulating work and professional goals for the

nurse, in line with the needs of the organisation, against which she will be examined over the coming year.

Through this talking and writing, the nurse and her manager are made visible and accountable (Gilbert 2001) and responsibility is assigned to the individual (Courpasson 2000; Flynn 2002). This technology establishes and maintains a yearly cycle that ensures the strengthening of the alignment of the individual with the organisation and also with their profession. In this way the performance management process is a “line of force” used to shape the conduct of the nurses into the future. That is, the performance management process is a technology by which the expertise of the nurses is developed in alignment with their local and extended professional community.

Any request for training can be examined against the written document and judged against the established inscribed goals. When in alignment approval for the training can be granted. The written documentation means the nurse herself can self-regulate and self-manage, only bringing to her manager requests that she has prejudged as aligned with the inscribed goals. That is, the nurses can self-govern their behaviour.

In this way, the performance management system contributes to the nurses strengthening their local and extended relationships of accountability through simultaneously enacting a technology that realises governmentality and the conduct of communal self-governance. Enacted together, as they are, means the CFHNT is realising a governmentality-communal self-governance practice duality.

In summary, the process of professional development strengthens the accountability of the nurses within their practice community, with their wider profession, and entrenches the basic relationship of accountability with the organisation, and importantly also, by extension with the State. The next section

now considers how the assemblage and appropriation of further technologies strengthened the extended relationships of accountability, and expanded the boundaries of practice.

4. Strengthening the relationships of accountability

This section explores how the CFHNT community further strengthened the local and extended relationships of accountability, and expanded the boundaries of practice through assembling and appropriating further technologies necessary to enact their practice. These technologies, whether ‘organising artefacts’ or ‘transforming tools and artefacts’, structure and discipline the time and space of the nurses’ work. That is, the utilisation of tools and artefacts enable the CFHNT community to formalise and standardise their practice in line with their colleagues in other locations.

This section is comprised of two parts. The first part focuses on the ‘organising artefacts’, the organising policies and procedures, and the second part focuses on the ‘transforming tools and artefacts’, the clinical resources. In each case, the discussion considers how their use strengthened the local and extended relationships of accountability and expanded the boundaries of practice.

4.1 Organising artefacts

The practice of the CFHNT is bounded and organised by a web of artefacts, that is, policies and procedures that completely surrounds and encompass them. The policies and procedures are ‘organising artefacts’ that separate out early childhood nursing from primary health nursing and nursing within the hospital setting. They define the practice focus, identifying and segmenting clinical topics, and explaining the techniques to enact early childhood practice. Assembling and

appropriating policies and procedures has been referred to as knowledge-in-use (Barley 1996), and contributes to the realising of the practice dualities described earlier. That is, in enacting the policies and procedures the nurses are collectively using their subjective experience to interpret the objective documents. In doing so, the local is linked to the global, and the individual to their community. This occurs through the CFHNT appropriating the policies and procedures in their local activities, that is, in their formal meetings and informal interactions. The ongoing discussion will show how the dualities combine to reinforce the governmentality-communal self-governance practice duality. The organising artefacts are “lines of force” that physically and temporally locate the nurses into standardised conducts, with an outcome being that they expand practice and strengthen the relationships of accountability between the nurses, their colleagues and the organisation.

The organising artefacts have been collated into the one manual, the ‘SWSAHS Early Childhood Policy and Procedure Manual’, and this has been appropriated by the CFHNT for their practice. Within the manual, the organising artefacts can be categorised into two policy areas – administrative and clinical practice. How each contributes to strengthening the relationships of accountability and the expansion of practice will now be discussed.

4.1.1 Administration policies

The administration policies regulate the organising and enactment of the nurses’ practice (Gilbert 2003). The policies shape everything from the way the nurses present themselves, to the use of the cars they drive, and what they do when they enter and leave the community health building. Drawing on these examples the discussion will explore the “lines of force” the policies extend to strengthen the local and extended relationships of accountability and expand the boundaries of practice.

Prior to stepping out of their home for work, the nurses' extended relationships of accountability are strengthened through the organisational "Code of Conduct" and "Uniform policy". These policies are technologies that shape how the nurses will act and present themselves as representatives of the AHS. These technologies dovetail with the nurses' expectations that they should present themselves as 'professionals'. During the CFHNT community's informal interactions, the nurses survey and comment on each other's appearance and behaviours, comparing or contrasting themselves against one another. In this way they collectively discipline, adopting conduct and a standard of dress as a community they deem appropriate for the workplace. This is an example of the multi-directional nature of power, impacting upon the nurses and taken up by the nurses, simultaneously manifesting submission and institutional status (Manias and Street 2000a).

Each sector of the AHS provides cars for the CFHNT so they can visit the health clinics and the homes of their clients. Each and every car has a sign which clearly identifies the vehicle and, by extension, the driver as belonging to the AHS. When using the cars the nurses have to complete the 'Car Movement form' detailing their journey: the date, time, length, purpose, name and signature of the driver are recorded; the form is a "immutable mobile" which can be transported to the transport department of the sector for examination by other people. An important influence on the nurses' conduct is the vehicle policy that identifies the appropriate, and inappropriate, use of the AHS vehicles. Through the 'Car-Movement form' and vehicle policy, the actions of an individual nurse are made technical and visible, and compared and measured against the population of drivers who use the car; together the policy and form is a governmental tool. In this way, the car publicly identifies the nurse as accountable to the AHS, and the policy and form is an organisational record by which the nurse is directly held accountable for the care of the car and the travelling, and work, she has undertaken. The nurse is made visible within the organisation by this technology. Making the nurse visible is a mechanism by which to control her conduct (Gordon

2002) and this visibility, or more specifically the technology, strengthens the organisational extended relationship of accountability.

The movement of the CFHNT into and out of the community health centre building is monitored. Upon entering or leaving the building the nurses are required to notate on the 'Nurse Movement form' - a form kept in a folder at the front desk that indicates their presence or absence. This form makes technical the organisation's occupational health and safety policy and can be used to locate staff in case of a fire or other emergency. The form is a local response to the organisational policy, that is, a local technology by which the CFHNT enact self-governance and thereby strengthen their local and extended relationships of accountability. However the nurses enact resistance against this requirement, at times not completing the form when "just going to the shop next door" or "going outside for a smoke"; they flexibly enact the policy, exercising discretion to make their experience of daily living more tolerable.

When organising their day the nurses of the CFHNT complete a 'Daily Activity form' that indicates their work plan for the day. The form requires the detailing of the clinic and/or home visits - client's name, location and time of the visit are recorded. This form makes visible the nurses within their community and demonstrates that each is engaged in appropriate work activities. All the nurses can view each other's forms as they are kept with the CFHNT intake officer. They can be used to locate the nurse during the day if necessary. This form is another technology that enacts locally the occupational health and safety policy of the AHS and reinforces their local community relationships. That is, the form is a technology by which the CFHNT enact self-governance, reinforce their local and extended relationships of accountability, and record their expanded sites of practice.

These administration policies are technologies that constitute the enactment of a discourse to ensure the safety of the nurses, while enabling the organising and

controlling of their practice. Being presented in 'safety' terms, the necessity for the technologies are rarely questioned, and if questioned explained and rationalised so that the opportunity for resistance is limited. The technologies have been constructed independently and assembled without regard for each other, constructing a web of tension that enables the CFHNT to survey and regulate their community. Further still, the technologies also enable other organisational actors to survey the nurses' practice.

Enacting practice is about coming to know how to interpret and use the technologies in the ways of the local community. This involves the nurses collaboratively appropriating the written word into similar thoughts and actions. The collaborative process of appropriation, as described in the previous chapter through the formal meetings and informal interactions, is simultaneously the disciplining of the nurses while realising their expertise. Alternatively, the technologies govern the nurses' conduct, and simultaneously the nurses enact self-governance appropriating them to realise their practice. In other words, the administration policies are organising artefacts that strengthen the local and extended relationships of accountability while providing the boundaries of their practice.

4.1.2 *Clinical practice policies*

Intersecting with the administration policies are the clinical nursing policies that are appropriated by the CFHNT to enact their practice. They too are 'organising artefacts' and include, for example, the "Breastfeeding Policy", the "Crying, Sleep and Settling Policy" and the "Maternal Health Policy". Increasingly drawn from a range of professional knowledge bases, including nursing, medicine, psychology and psychiatry, these policies shape and guide the nurses' clinical practice, providing techniques for intervention with families; this approach to nursing has been labelled evidenced-based nursing (Winch, Creedy and Chaboyer 2002).

These policies enable the CFHNT to shape the health conduct, experiences and aspirations of the maternal and child population (Rose 1996, 1999; Gilbert 2003).

Social policy plays a co-ordinating role in forming 'the social'. It promotes and organises knowledge, norms and social practices to regulate the quality of life of the population, its health, security and stability. (Hewitt (1991: 225) in Holmes and Gastaldo (2002: 560))

As represented by the three examples above, the nursing policies have an increasingly broad focus, beyond just physical health considerations, thereby shaping the 'social' experiences of the parents and their interactions with their children. The policies provide the nurses and parents with norms against which the family can be compared and judged, and they provide techniques that a nurse can advise the parents to use to manage and regulate their child's conduct. That is, the policies are governmental tools used by the CFHNT to shape the maternal-child population. Being used in this way, the nurses' assemblage and appropriation of the policies is the demonstration of their expertise to themselves, the family, their colleagues, and the other members of the AHS.

The CFHNT participate in determining the clinical policies through the local AHS policy development process and/or more distantly through involvement in their professional association. Whichever way the nurses contribute, they are involved in setting out a standardised criteria of performance for their work. In this way the nurses enact self-governance. For example:

Child and family health nurses work cooperatively with the family to enhance the wellbeing of parents and children and to support the healthy functioning of the family group. (CFHNA - Child and Family Health Nurses Association - NSW 2001: 2)

and,

Education and information will be provided to families according to the Karitane Sleep and Settling Policy and Procedure. (SWSAHS Crying/ Sleep and Settling Policy Draft 2002)

As reflected by these two examples, these policies set out appropriate professional conduct for the nurses in relation to the family, as endorsed by their employing organisation and wider profession. That is, they reinforce the local and extended relationships of accountability with the organisation and the wider profession, and reflect an expanded practice focus. In turn, the organisation and nursing profession by requiring adherence to such policies, promote the professional expertise of the CFHNT and, in doing so, reinforce the relationships of accountability and expanded practice focus.

As well as policies that shape the conduct of the nurses and allow them to govern the maternal and child population, the nurses utilise a number of other clinical resources, or tools and artefacts, in their practice. The next section considers how these clinical resources similarly affect practice and the extended relationships of accountability.

4.2 Transforming tools and artefacts

Now the clinical resources, or alternatively the 'transforming tools and artefacts', are explored. Firstly, consideration of how the 'transforming tools and artefacts' together expand practice and strengthen the relationships of accountability is undertaken, and then the two different types - the measuring tools and the recording-therapeutic artefacts - will be considered.

The 'transforming tools and artefacts' are the measuring tools and associated items and the recording-therapeutic artefacts. The 'transforming tools and artefacts' shape the conduct of the CFHNT by making the nurses examine and record information in specific ways.

...making people write things down, and the nature of the things people are made to write down, is itself a kind of government, urging them to think about and note certain aspects of their activities according to certain norms. (Rose and Miller 1992: 200)

The 'transforming tools and artefacts' normalise and standardise the clinical environment for the nurses; their use brings order to the chaotic unordered world (Henderson 1994). They discipline the CFHNT while enabling the nurses to realise expertise. In combination, they construct and shape the practice of the CFHNT; individual resources cannot be used appropriately or effectively without the others. The measuring tools are used to construct information for transcription into the recording-therapeutic artefacts.

(The tools) make the objects of government thinkable in such a way that their ills appear susceptible to diagnosis, prescription, and cure by calculating and normalising intervention. (Miller and Rose 1993: 183)

The tools enable the CFHNT to "transform" (Barley 1996) and "translate" (Schultze 2000) the lived experience of the baby and family into a written form; they condense three dimensions into two, creating indices and symbols to be transcribed and transported, via the recording-therapeutic artefacts, to other contexts for examination by other people. The objectification of the baby into standardised information enables consideration and review of practice by the nurse with the mother, her CFHNT community and other professionals in other locations. In other words, the assemblage and appropriation of the measuring tools enacts practice while strengthening the extended relationships of accountability.

Using the recording-therapeutic artefacts the CFHNT enacts their clinical practice, and simultaneously they establish the boundaries for, and the focus within, their practice (Gilbert 2003). The recording-therapeutic artefacts define what measuring tools are necessary for clinical practice and transport the

transcribed information to other locations; they are “immutable mobiles”. Along with the measuring tools the artefacts make the health assessment, caring relationship and recoding activities technical. The record making is a display of professional and organisational competence, they vouch for the fact that the work that should have been undertaken has been undertaken and they render that work visible to other professionals in other places. The recording of information in the artefacts makes the practice of the nurses visible, auditable and therefore accountable (Dingwell 1988; Power 1997), linking the nurses in power relations (Barnes 2000).

The potential value of the ‘transforming tools and artefacts’ is realised through the nurses, and correspondingly without the ‘transforming tools and artefacts’ the nurses are simply another visitor to the family, able to offer friendship or support, but not expertise. The ‘transforming tools and artefacts’ are standardised early childhood nursing items in the AHS, or alternatively global resources, and so their local appropriation enacts the local-global practice duality. They are used to make visible nursing practice – for the family, the CFHNT community and the other professionals within the organisation and other health and welfare services. The ‘transforming tools and artefacts’ have enabled the CFHNT to enact and expand their practice and to govern the conduct of the families.

Nursing work is made visible by its definition, measurement and enumeration; similarly, these are key elements in the governing process, as they allow for evaluation, judgment and review. (Winch, Creedy and Chaboyer 2002: 158)

With their resources the nurses are transformed into ‘experts’ who offer “evaluation, judgement and review”. To this end, the ‘transforming tools and artefacts’ structure the interactions and time for the nurses and families, and in doing so realise a “nursing gaze” (Lawler 1991; Cheek and Rudge 1994; Gastaldo and Holmes 1999; Manias and Street 2000a).

A nursing gaze dictates specific methods of observation, techniques of registration and procedures for investigation. Thus the nurse participates in the construction of a sophisticated apparatus of surveillance. (Gastaldo and Holmes 1999: 236).

The CFHNT have appropriated the 'transforming tools and artefacts' to enact surveillance upon the families (Armstrong 1983; May 1992); this has been identified as a necessary precondition for the therapeutic role of nursing (Bloor and McIntosh 1990). Through their use the nurses construct a limited focus (Barnes 2000), systematised information about the baby and mother (Gastaldo and Holmes 1999), knowledge (Henderson 1994), enact subjectivities (Holmes and Gastaldo 2002) and power (Peckover 2002). Together, using the resources, the nurse and parent(s) unite in a project of truth-telling (Manias and Street 2000; Holmes and Gastaldo 2002) linking the past into the future. This project aligns the health wishes of the family with the expert identity enactment of the nurses' and with the normative expectations of the state whereby each shapes and assists the other to achieve what they desire.

As described in the previous chapter, the know-how to appropriate the tools and artefacts is through participation in the CFHNT community, which necessitates enacting the individual-community and the subjective-objective practice dualities. Using the resources has made the work of the nurses similar and different to the work of technicians reported by Barley (1996). Unlike the technicians reported in Barley's research, the nurses' work has remained very physical and sensory orientated; direct contact with the mother and baby is a necessity for the nurses to enact their clinical practice. However, similar to the technicians the nurses' work has become informed (Zuboff 1988; Barley 1996). Through the 'transforming tools and artefacts' they make the physical world into abstract symbols and indices. Increasingly the CFHNT practice is governed by knowledge embedded within the 'transforming tools and artefacts', and the tacit knowing of how to use them in practice, which therefore necessitates participation within the CFHNT community to enact practice.

As “immutable mobiles” the recording-therapeutic artefacts enable transportation of work (undertaken in clinics and home visits) for consideration by the community within their formal meetings and informal interactions. That is, in conjunction with the organising artefacts noted previously, they are a technology by which the CFHNT has conceptualised and constructed their own knowledge and discourse. In other words, they are a technology by which the CFHNT community have realised collaborative self-governance. The recording-therapeutic artefacts also enable the work to be transported elsewhere for consideration by other organisational actors and other professionals in distant locations. To state this another way, together the transforming tools and artefacts promote an expanded practice and strengthen the extended relationships of accountability.

Taken together, the ‘transforming tools and artefacts’ enable, expand and govern the practice of the CFHNT. They comprise a technology that realises a standardised performance from the CFHNT, thus enabling the community to collectively compare and assess their practice. In this way, and similar to the organising artefacts discussed previously, they contribute to the enactment of the practice dualities, including that of governmentality-communal self-governance.

Now how the individual transforming tools and artefacts each strengthened the established relationships of accountability and expanded practice will be considered. That is, firstly the measuring tools and then the recording-therapeutic artefacts are the focus of the ongoing discussion.

4.2.1 *Measuring tools*

The measuring tools are the measuring mat, the scales, the tape measure and the hearing test kit; the associated items are the gloves, hygienic wipes and sterilising gel. As noted above the measuring tools make complex biological

processes numerical and therefore calculable and thinkable, which means norms can be constructed and individuals compared against them; that is governmentality can be enacted.

The presence of the associated items is the effect of the “line of force” of medical (scientific) knowledge into the CFHNT community; they are for infection control. The nurses use these items, in association with the ‘Infection Control Policy’, to reduce the possibility of transfer of infection from the nurse to the baby, or from one baby to another. Together the items and policy is another technology that shapes the conduct of the nurses. Family and friends do not undertake such technical conduct when they handle the baby. The use of these associated items is a form of “caretaking” (Barley 1996) whereby the nurses are ensuring their measuring tools remain in good working order, and in doing so they are demonstrating their accountability to the organisation for their resources. This is another small way that the nurses are required to enact their extended relationships of accountability to the organisation and similarly demonstrate their nursing professionalism to the family.

4.2.2 *Recording-therapeutic artefacts*

Early childhood nursing has two significant recording-therapeutic artefacts. These are the ‘AHS Health Record’ and the ‘Personal Health Record’ provided by the AHS and State Government respectively. As noted, these items are “immutable mobiles” that enable the construction of case histories for consideration by other professionals in other places at other times. Now each will be briefly considered.

The CFHNT commonly refer to the 'Personal Health Record' as 'the baby's blue book' after the blue plastic cover. The 'baby's blue book' is produced by the NSW State Health Department and distributed by the nursing staff in maternity units to parents when the baby is born. Approximately 20cm x 16cm, lightweight with a flexible plastic cover, the book is easily transportable, durable and inexpensively produced. The book is filled with growth and development information, baby and child care advice, dates the parent is advised to present the child for health checks and medical contacts in case of an emergency. The book allows the health professional and parent to compare the individual baby against the norms of the population and standardised health criteria. In this way the 'Personal Health Record' is a governmental tool that serves to educate, guide, and direct both the parent and health professional in the care of the baby.

The 'baby's blue book' is also for recording visits of the baby to the doctor, hospital or early childhood nurse and as such is an "immutable mobile" which allows the circulation of information between professionals in different locations. While the book is completed by the relevant health professional during any clinical encounter - they record the baby's characteristics and parental conduct - the book remains the property of the parent. The book assigns responsibility to the professionals, sets out standardised performance (assessment forms for the professionals to complete) and offers expertise while controlling their conduct.

In taking over responsibility for the early childhood work the CFHNT agreed that the 'Personal Health Record' be completed whenever a nurse provides a service to a baby. In particular, the nurses were to complete the 'Child Health Check' forms. This requirement meant the nurses' practice expanded to include examining the immediate physical health and ongoing development of the baby, screening for developmental risk factors and assessing the family's wellbeing. They were required to document these issues in the 'baby's blue book' and

transfer the removable duplicate page into the AHS file. In enacting this conduct the CFHNT standardised practice, strengthened the extended relationships of accountability with other health professionals and expanded the boundaries of practice. To put this differently, the book is a technology that contributes to the self-governance of the CFHNT while engaging them in the governing of the population.

4.2.2.2 *The AHS Health Record*

The CFHNT refer to the 'AHS Health Record' simply as the 'file'. The file is produced and retained by the AHS and represents a standardised mechanism to collate the forms containing information about the baby and family. Physically the file is a cardboard folder containing paper sheets. In constructing their practice the CFHNT assembled a 'master file', which contained all the forms to be completed in their clinical work. They updated or constructed their own local artefacts - a Community Health Client Intake form, the Home Visiting Environmental Checklist, and the Family History form - and also they utilised artefacts from other early childhood nurses and other disciplines - growth and development charts, Infant Developmental Milestones form, the Ingleburn Information System (IBIS) form, and the Edinburgh Postnatal Depression Scale (EPDS). They have then replicated this 'master file', using it as a standard by which to construct the files for their early childhood work.

The standardised file strengthened the extended relationship of accountability while maintaining the independence of the individual nurse (Power 1997; Hood, Rothstein, Baldwin, Rees and Spackman 1999; Kemshall 2000). The nurse knows that the organisational record can be examined at any time revealing her actions; colleagues can examine, assess and judge her practice through interrogating the files she has used in practice. That is, the file makes visible and shapes the conduct of the nurse (Gordon 2002).

The work of the nurses is made technical and visible through the file, and in doing so controllable through the audit process (Power 1997; Kemshall 2000).

These arrangements retain the formal independence of the professional whilst utilising new techniques to render their decisions visible and amenable to evaluation. They are entirely consonant with one key vector of the strategic diagram of advanced liberal styles of governing; autonomisation plus responsabilisation. (Rose 1999: 154)

The audit, and the nurses' knowledge of the audit, is part of the web of tension that extends the norms of the community into the practice of the individual nurses. The nurses practise as if every file will be examined, they self-regulate and self-manage as if a colleague is physically watching them as they work (Holmes 2001). In doing so, they orient their conduct to maintain their reputation as competent professionals within their community of practice. That is, they enact their individual-communal practice duality as they collectively engage in self-governance.

In this way the activity of constructing and using a standardised file is a technology that contributes to standardising the conception and enactment of practice. The file is a technology by which the CFHNT engage in communal self-governance, strengthen the extended relationships of accountability and demonstrate an expanded practice focus.

The artefacts within the file are themselves technologies and immutable mobiles that individually strengthen the extended relationships of accountability and reflect the expanded practice of the CFHNT. To make this point one local example, the Family History Database, and one global example, the EPDS, will be briefly considered. These forms are contained in appendix five.

4.2.2.2.1

A local technology

The old generalist nursing team had constructed a 'Family History Database form'. This form is a local technology used to collect demographic and clinical information (physical measurements) relating to the development of the baby. When the CFHNT assumed responsibility for the work of early childhood nursing, their collaboration and reflection about practice, the standardised use of the 'organising artefacts' and the 'transforming tools and artefacts' contributed to the expanded focus for the CFHNT. This necessitated a reviewing and updating of this form. The new form, alongside the physical information, now also prioritises the family medical history including mental health history, the maternal health history and explicitly requires the attachment of the 'Child Health Check' forms from the Personal Health Record. While the new form is an outcome of clinical practice experience, when being used the new form constructs a new experience of clinical practice (Zuboff 1988). The new form is a technology that reinforces the expanded practice focus from the physical health of the baby to include the psycho-social and physical health of the family. The technology formalises and standardises (Timmermans and Berg 2003) the parent(s) confessing their family health history to the 'expert therapeutic nurse' who inscribes the information on to the form, and places it within the file constructing a unique case history. As a result of any disclosure the nurse may be required to consult with colleagues or refer the family on to other services. In this way this local technology strengthens the extended relationships of accountability and reinforces the expanded boundaries of practice.

4.2.2.2.2

A global technology

The Edinburgh Postnatal Depression Scale (EPDS) is an artefact from the discipline of mental health that allows the nurses to assess, but not diagnose, postnatal depression. The EPDS is a form with ten questions; each question has

four options, which is completed by the mother and then the form is 'scored' by the nurse. Each question receives a score between 0 and 3, hence the total can range from 0 to 30. A score of 0-9 is interpreted as 'the mother is not depressed', while between 10-12 means 'the possibility of depression exists', and a score greater than or equal to 12 indicates that 'depression is highly likely'. The form is predictive in outcome and when used in a supportive counselling environment can be an effective tool to explore emotions and experiences associated with a new baby.

While this artefact has been a part of early childhood nursing for some time and been included in the work of the generalist team, there had not been consistent or standardised use of the artefact by the nurses. To address this problem, the CFHNT together undertook training in the use of the EPDS. Through this conduct the nurses constructed a communal understanding that provided a basis for the consistent and standardised use and reviewing of the EPDS in their practice. The EPDS allows the nurse and mother to make visible the mother's experience and compare and measure this against the maternal population; that is, the EPDS is a governmental tool.

In my terms, the EPDS is a measuring tool and recording-therapeutic artefact. The mother is encouraged, and where needed assisted by the nurse, to reflect and then confess her experiences, in both written and verbal form, to the expert nurse. Through this interaction, the mother and nurse are enacting their identities (Gilbert 2001; Gordon 2002). The nurse uses the completed artefact as a tool, therapeutically exploring with the mother her experiences and current psychological/ emotional state. Using the tool the CFHNT exercise "pastoral power" (Holmes 2002; Holmes and Gastaldo 2002) engaging with the mother to jointly construct savoir, or knowledge, about the mother, the governed subject. Using this knowledge the nurses are required to act as a "buffer" (Barley 1996), suggesting to the mother that she be referred on to other professional services when the possibility or likelihood of depression is identified. In this action the

CFHNT are enacting their subjective-objective practice duality through interpreting the abstract information with their community's experience. The EPDS, similar to other nursing artefacts, is an immutable mobile and also a coordinating device (Timmermans and Berg 2003) between the CFHNT and other health and welfare services. Alternatively, the EPDS is an expansive and global technology that expands the practice boundaries and strengthens the extended relationships of accountability.

This concludes this section, which has detailed how the assemblage and appropriation of technologies by the CFHNT have contributed to their expertise, while disciplining them as a community. The technologies realise and define the practice of early childhood nursing. Further the appropriation of the 'organising artefacts' and 'transforming tools and artefacts' has strengthened the extended relationships of accountability. Their use by the nurses constructs connections and information to be passed along to other professionals; practice has expanded to necessitate inter-professional cooperation and referral. The next section examines the expanded practice enacted by the CFHNT, that is, the enactment of the role of a 'therapeutic early childhood nurse'.

5. Expanded boundaries of practice

This final section discusses the expanded practice and extended relationships of accountability enacted by the CFHNT as a result of their assembling and appropriating of technologies. That is, in the technologisation of practice the CFHNT has enacted the role of a 'therapeutic early childhood nurse', realising a dual alliance with a political strategy and the parents-families they provide a service for (Rose and Miller 1992; Holmes 2002). Firstly, the 'therapeutic early childhood nurse' will be discussed, including the key role of the IBIS technology. The political dimension of the dual alliance will then be detailed, and the family dimension follows thereafter.

5.1 The 'therapeutic early childhood nurse'

The CFHNT with their 'organising artefacts' and 'transforming tools and artefacts' have expanded their practice focus beyond a simple physical examination of the baby.

"...as I said to you it's, years ago child and family health or early childhood was more baby focused but now it's moving more to the family,... to focus on how they're coping with the transition to parenting or adjustment to parenting, as you noticed all over the last, last few months ... some of the issues are not with the baby it's with the family we identify now, some of the questions that are asked DV,.. child abuse,.. risk factors there, the social isolation, financial issues, and as I've probably said before the baby's usually well- it's what going on for that family, so that's where the move has shifted from the wellness of the baby to the family, what's going on for, not that we, we still go ahead and monitor the growth and development of the baby but I suppose we get more into the head, don't we, of the mum, or the, yes.. usually the mum.."

Julie, A/NUM Interview 25/10/01

As the nurse has explained, the CFHNT practice developed to provide a complex assessment that integrates physical and psycho-social components, with the importance of the latter increasingly recognised over time. This expansion of practice is following the increasing appreciation of the impact that the parents' emotional and psychological state, and the social circumstances of the family, have on the health and growth of the baby (for example see Keeping, Najman, Western and William 1996; Preski and Walker 1997; Fergusson and Woodward 1999; Silver, Stein and Bauman 1999).

The nurses' clinical practice expanded to integrate a psycho-social dimension alongside the physical assessment of the baby or child. The nurses' clinical practice now involves undertaking a comprehensive physical examination of the

baby, assessment of the feeding and sleeping routines of the baby, assessment of the mother - incorporating her physical, emotional and psychological state - and assessment of the overall adjustment of the family to the arrival of the baby. Accompanying the assessment, the nurses offer significant emotional support, including counselling for a range of maternal and child management problems. They also provide education and information about health issues for the mother, and developmental issues for the baby - they have a health promotions role. Where necessary the nurses provide information and/or referral to medical, counselling, family support/welfare services, specialised parenting services, child-care services, and the State child protection service - the Department of Community Services. In this expanded role the nurses are understood to be engaging in a "discourse of the social" (Silverman 1987 in Peckover 2002), and this integrated process of examination, assessment, judgement, counselling and education is an integrated policing and therapeutic role (Donzelot 1979; Cody 1999; Rose 1999; Holmes 2002; Holmes and Gastaldo 2002; Peckover 2002).

The practice outcome has been the enactment of a standardised 'therapeutic early childhood nurse' by the CFHNT (Colwell 1994; Hardy and Leida-O'Sullivan 1998; Cody 1999). The assemblage and appropriation of technologies into practice by the CFHNT has brought this nurse into being. As Rose (1996: 38) explains:

Human being is emplaced, enacted through a regime of devices,
gazes, techniques that extend beyond the limits of the flesh.

The nursing role has expanded from a physical check of the baby to include a significant therapeutic component that is made technical, including through the use of the file, Personal Health Record, Family History Database and the EPDS artefacts.

These technologies have disciplined and structured the individual nurses whereby they conceptualise and enact a standardised 'therapeutic early childhood nurse' in practice; an outcome that has been described as "normative isomorphism" (Slack and Hinings 1994). As a result of the increasing connections that have been assembled, the nurses' relationships became increasingly complex and multivariate. The technologies have necessitated the CFHNT to become increasingly integrated into networks with other health and welfare professionals (Timmermans and Berg 2003). This 'therapeutic nurse', while certainly not a new development within nursing (Bloor and McIntosh 1990), is a significant practice development in the practice of early childhood nursing at Hoxton Park.

As well as changing the clinical practice of the nurses, this expanded therapeutic role places increased emphasis on the nurses' collaborating within their community. The individual, embedded within their community, has become a vital 'tool' for practice, because subjective experience, or the community's collective tacit knowing, is required for practice. That is, with the tools and artefacts the nurses engage in the conduct of "ex-pressing" (Schultze 2000). The nurses themselves are an instrument that observes, touches, speaks, listens and feels; they are a 'tool' that continually collects, interprets and records information. The nurse is the tool that engages and integrates all the artefacts (organising and recording-therapeutic) and (measuring) tools.

This action of "ex-pressing" involves the nurses examining, assessing, comparing, reflecting and evaluating their immediate sensory experience against the knowing of their practice community. The nurses then turn this experience into verbal and written words for the mother, the file, the interactions with one another, and other health and welfare professionals as necessary. In doing so, the nurses are enacting "participative observation" (Savage 2000) which attempts to derive knowledge using all the senses; that is, enacting practice now requires the nurses to undertake a complex activity that integrates the actions of

translation (Schultze 2000), transformation (Barley 1996) and transcription (Latour 1986) of their bodily experience. To do this, the nurses have to identify and integrate their physical, emotional, interpersonal and cognitive skills and abilities, and their ethics and values that shape and influence their practice.

The expressing of the CFHNT is a much more complex activity than that undertaken by the system administrators in Schultze's (2000) study. Schultze reports that her system administrators are using cognitive skills and knowledge. In contrast, here the nurses are engaged in an experience that unites their mind, body and ethics. An example of conduct much more similar to the nurses is that from Thompson, Warhurst and Callaghan (2001), who have reported how interactive service workers are increasingly required to use their emotions to influence the quality of their work (Hochschild 1983).

While all the tools and artefacts have contributed to realising the 'therapeutic early childhood nurse, the IBIS has, in particular, played a significant role. That is, the IBIS artefact is an immutable mobile that unites the physical, socio-demographic and psychological aspects of the nurses work – these details are all recorded on the IBIS form. The compilation of this information within a computer database has increased the visibility of the work, enhanced surveillance and provided new information about the work for the CFHNT; through the IBIS technology the CFHNT have enacted governmentality and self-governance.

As every CFHNT file contains an IBIS artefact, achieved through the standardising of the file as noted earlier, the total capture of information representing all of the work of the CFHNT is possible. Where the physical separation of clinics ensures the separation of files from one another, the IBIS forms are completed and scanned into a computer database uniting the information in a translatable and transportable format (Latour 1986). Through the 'IBIS Reporting Feedback Mechanism' information about the work of the nurses is accessible to themselves and their colleagues.

This project (Reporting Feedback Mechanism) specified reporting by client vulnerability levels and a selected range of characteristics about both the client and the health and welfare services provided by the Child and Family Health Nurses. (SWSAHS IBIS V4.01 User Manual 2002: 4)

The program allows authorised users to immediately access the information contained in the IBIS database. That is, the IBIS enables the maternal and child population to be constructed.

For a domain to be governable, one not only needs the language to render it into thought, one also needs the information to assess its condition. (Rose 1996: 73)

The IBIS technology enables the CFHNT to collate and construct the information necessary to examine, assess and realise the governing of the maternal and child population; as discussed in a previous chapter the IBIS is a “new visual and written language” (Latour 1986). The ‘IBIS Reporting Feedback Mechanism’ enables the progress of individual clients to be reviewed, the services provided, the health gains made, and the assessment of the family to be examined and judged. The program presents the information in a statistical format, automatically completing the complex and numerous mathematical calculations for the nurses; the aggregating and ordering power of the technology makes visible information - patterns and correlations - previously hidden (Latour 1986, Zuboff 1988; Robins and Webster 1999; Berg 2001). In doing so an individual family can be examined, assessed and judged against the norms of their population.

Similarly, the IBIS technology allows the examination of the work of an individual nurse and also the activity within an individual clinic. But more significantly, the system allows multiple nurses, clinics and/or sectors to be collated, examined, compared and judged against one another with ease. That is, the IBIS

technology has constructed an 'early childhood nurse population'. An individual nurse's practice can be examined, assessed and judged against their population. To put this differently, the nurses become increasingly visible and accountable to one another through the technology of the IBIS.

Through the IBIS the CFHNT now have information that previously never existed; they have constructed information about a maternal and child population, and a early childhood nurse population, to which they belong. This new information is utilised by the community to assess and reflect upon their practice, individually and collectively, that is, the new information furthers the nurses' capacity for collaborative self-governance.

As the IBIS form is included in every file, the nurses' practice with the form can be audited in the traditional format (as discussed in relation to the other forms in the nursing file), thereby enabling surveillance and self-regulation. However, because the IBIS form is scanned into a computer database, this allows for the increased surveillance and regulation of the clinical practice of the nurses that Bentham would not have dream possible.

Information systems that translate, record, and display human behaviour can provide the computer age version of universal transparency with a degree of illumination that would have exceeded even Bentham's most outlandish fantasies. (Zuboff 1988: 322)

The early childhood nurses' work becomes translated and visible through the database and computer screen (Robins and Webster 1999; Berg 2001). The computer renders missing information immediately obvious; in doing so the IBIS technology has made the practice of the CFHNT community, and the individual nurses, highly visible. To continue with Zubboff (1988: 350):

Individuals would be able to see their own behaviour reflected in the system, while knowing that others (peers, subordinates and superiors) could see it as well.

Missing information is visible to all nurses, and able to be attributed to a specific nurse. The nurse can then be questioned as to the reason for this and directed to take remedial action. As a result, the CFHNT's self-regulation of the forms, and hence the clinical nursing practice, is continually enacted and reinforced through the assemblage and appropriation of the technology (Zuboff 1988; Colwell 1994; Frissen 1999; Robins and Webster 1999; Berg 2001).

Rather than the information from an individual file, or even from a selection of files, able to be only examined by one nurse, in one place, at one time, the IBIS allows all the information from all the files to be examined by many nurses, in many places, at the one time (Giddens 1984). The IBIS technology transforms the nursing reality, simplifying the physical and intellectual tasks required for surveillance.

Information technology essentially alters the contours of reality – work becomes more abstract, intelligence may be programmed, organisational memory and visibility are increased by an order of magnitude beyond any historical capability. (Zuboff 1988: 390)

The IBIS technology transforms reality, altering the surveillance able to be enacted by all nurses, and other organisational actors, over each other at all times. The IBIS technology constructs information and information flows where previously they did not exist (Robins and Webster 1999; Berg 2001). No longer do the files physically need to be identified, assembled, carried to a room, laid out, examined by hand and then returned to their appropriate place. The CFHNT can now sit at their desks and through the computer access all the information through a series of keystrokes; in this way the technology “affords” a time and space effect, both distancing and compressing the reality of the nurses (Harvey

1989; Frissen 1999). Every nurse, or any other health professional, with a computer and access to the IBIS becomes a centre of calculation (Latour 1986). The construction and use of the IBIS technology is the construction and enactment of not a centre of calculation but *many* centres of calculation. Whereas previously the Simpson Centre was *the* centre of calculation, as only they had access to the database, with the “IBIS Reporting Feedback Mechanism” now *all* early childhood nurses and their managers have become centres of calculation. As a result, surveillance has become possible not just locally but at and from distant sites.

To summarise, the IBIS technology is a line of force that extends surveillance into the nurses’ practice, requiring them to enact a higher level of self-regulation (Zuboff 1988; Frissen 1999); in these ways then, the IBIS too is a governmental tool, and in the words of Zuurmond (1994: 287), quoted in Frissen (1999: 78), “we have a virtual fortress” that imposes standardisation of perception, execution and calculation. But importantly also, the IBIS technology disciplines the practice of the CFHNT while transforming them into experts, that is, they now enact the role of the ‘therapeutic early childhood nurse’. The IBIS also provides them with further (new) information to govern the maternal and child population. Further still, the IBIS provides the CFHNT with new information about their own early childhood nurse population, necessitating collaboration while enabling them to more effectively assess their collaborative practice, or to put this differently, the IBIS contributes to the CFHNT realising collaborative self-governance.

This expanded role has been realised through a dual alliance, or alternatively strengthened the extended relationships of accountability, and the next section examines this alliance.

5.2 *A dual alliance*

The 'therapeutic early childhood nurse' enacted by the CFHNT has strengthened the extended relationships of accountability. This has occurred through realising a dual alliance, mediated via a political strategy, with the organisation and State, and the parents-families the nurses provide a service for (Rose and Miller 1992; Holmes 2002). Exploring this dual alliance will show the extended relationships of accountability have been strengthened, and that this has contributed to the technologisation of practice in this location. Firstly, the organisational and state dimension will be detailed, then the parent-family dimension will be considered.

5.2.1 *Alliance with the organisation and state*

The SWSAHS, along with other AHS in NSW, have embarked on the implementation of a program known as 'Families First' at the direction of the NSW State Government. The Families First program focuses on early intervention for 'at risk and vulnerable families'.

Families First aims to better link preventative, early intervention and community development programs to form a comprehensive network capable of providing a wide range of support to families raising young children. This area (supporting parents who are expecting or caring for a new baby) will predominately be the responsibility of Maternal and Child Health and Community/Population Health Services with a particular emphasis on services provided by Primary Health Nurses. Families First will build on the initiate of the early childhood health services by increasing accessibility for families. (SWSAHS Families First Overview 2002: 1)

Respecting the autonomy of both the family and the nurses, the Families First strategy aims to affect conduct through "support" and "by increasing accessibility"

while simultaneously maintaining a distance from the families by acting through the nurses, “building on the(ir) initiative”. That is, the general rationality of Families First is linked to a specific professional group, the early childhood nurses, with the local connections and techniques to enact the intervention strategy. The Families First strategy is aiming to influence the conduct of the both the nurses and the families by constructing an alignment between the nurses’ desire to be experts and the families’ desire for their wellbeing.

The nurses with their technologies, the practice community to which they belong, and the backing of the AHS and State, through the political strategy of Families First, are now approaching the families embodying expertise and authority (Henderson 1994). Interestingly this is a similar role nursing expanded into in Britain and Australia in the 1800’s. Societies of women, supported by the State – including in 1887 being backed by the sovereign power of Queen Victoria, trained women as nurses to be “health visitors”.

Health visitors were engaged to monitor sanitary living conditions and to educate working class women on domestic hygiene and child nurturing, activities that were accepted by society because they maintained a veneer of femininity. (Francis 2001: 171)

Nearly two hundred years later a strikingly similar intervention is being undertaken. In the SWSAHS the early childhood nurses, including the CFHNT, have implemented a program of universal home visiting for the Families First program; once again this is the State sponsorship of nurses visiting families (Peckover 2002). In a very real sense, the CFHNT in their role as ‘therapeutic early childhood nurses’ are present day “health visitors” who are engaged to “monitor living conditions and educate”. To draw upon their words:

“...seeing new mothers, checking the babies health and physical condition, discussing feeding, discussing breastfeeding, discussing any issues or concerns they might have with their babies, assessing their emotional state, I suppose with the

EPDS, and then, ...exploring that with them to see if there is anything that we can do for them that would be of any assistance..."

Sarah, ECN, Interview 11/10/01

The nurses have translated the strategy of Families First into their own terms - examination, assessment and support work with families - and in doing so have become aligned with the organisation and State, and found increased recognition of their professional identity and expertise (Gastaldo and Holmes 1999).

For the nurses the increased recognition of expertise has come at a price, and that price is their increased surveillance of families (Donzelot 1979; Armstrong 1983). The nurses now have an explicit role to assess, identify and refer to other professionals those families identified as "vulnerable" or "at risk". The nurses are bound by the NSW State Health Department's policy guidelines to identify and report matters of child protection, domestic violence and women with postnatal depression. They also seek to refer to community agencies those families who may require assistance with the physical or emotional tasks of parenting and child development. Going into the family home, the early childhood nurses are the agents of the State, policing the actions and interactions of the families; they have become agents of social control (Bloor and McIntosh 1990; Gastaldo and Holmes 1999). The CFHNT have become professional agents by which "government at a distance" (Rose and Miller 1992; Rose 1999) can be enacted. An outcome is that the assemblage and appropriation of the Families First strategy has strengthened the CFHNT extended relationships of accountability to the AHS and the State.

The artefacts and tools utilised to enact practice have become the technologies by which the governing of the population is realised. One such technology that has become central to this end is the IBIS, although this is not a role envisioned for the artefact when originally constructed.

Contrariwise, techniques invented for one purpose may find their governmental role for another. (Miller and Rose 1993: 85)

As has been discussed earlier, the IBIS was originally an artefact developed by the nurses to enable them to understand, account for and manage their clinical practice. Later the IBIS expanded to become a research tool utilised by the staff of the Simpson Centre, and a key database in the MINET program. Now the IBIS has become a technique of the Families First program. The AHS directed all early childhood services to implement the IBIS and the information collected is being used to meet the reporting requirements of Families First. The researchers of the Simpson Centre using the information have constructed 'health maps' of the maternal and child population in SWSAHS; for examples of a health map see appendix seven. These maps are a modern version of the moral topologies constructed in Britain by the statistical societies.

Moral topologies of the population were constructed mapping pauperism, delinquency, crime and insanity across space and time and drawing all sorts of conclusions about the changing rates of pathology, the causes of such conditions and the measures needed to alleviate them. (Rose 1996: 74)

The IBIS technology utilised to construct the maps today is more sophisticated than that used in the past but the outcome is the same: the health maps represent a moral topology of the population. The maps make visible the physical and social health of the population, they are transportable to distant centres of calculation (Latour 1986) and translatable into very specific health and welfare programs of action and intervention. That is, through the IBIS technology the CFHNT and other early childhood nurses in the AHS engage in the governing of the maternal and child population.

In SWSAHS the political strategy of Families First is realised, in part, through the information relationship made possible by the IBIS technology.

The possibility of giving political direction to autonomous units is ultimately tied up with the information relationships of governance, answerability and feedback. (Frissen 1999: 81)

The IBIS allows the CFHNT to communicate with their managers and directors within the AHS, and these organisational actors to then communicate with the Families First policy makers in the NSW Government. The IBIS technology provides an information relationship that allows the AHS and CFHNT to retain their autonomy from the State Government. Furthermore, the IBIS technology provides an information relationship that allows the CFHNT to retain their autonomy within the AHS. In other words, the IBIS technology has strengthened the local and extended relationships of accountability.

The other dimension to this alliance is with the parents-families the services are provided for. This dimension is now explored.

5.2.2 *Alliance with the parents-families*

Enacting the ‘therapeutic early childhood nurse’, the CFHNT are offering their home visiting service continually emphasising the support and assistance they can provide for the parents. The assemblage of the tools and artefacts for their practice has enabled the nurses to expand their focus and simultaneously maintain the independence of the families.

Experts strive to govern their clients according to the new regime of autonomy and choice, utilising a tool-bag of techniques from explanatory systems as distinct as psychoanalysis and behaviourism to attempt to install the capacities for self-determination and self-mastery. (Rose 1999: 89)

The CFHNT use of their tools and artefacts enables them to demonstrate expertise through offering the families “autonomy and choices”. Rather than

'opinions', the nurses now produce 'facts' or 'truths' through tools and artefacts embodying science and psychology (Miller and Rose 1993; Rose 1999). Consequently, the nurses' power becomes subtler being exercised through the techniques they use (Gastaldo and Holmes 1999; Jorgensen 2002). The techniques and resources allow the nurses influence without being seen to be encroaching upon the sovereign territory of the family. Armed with such 'truths' the CFHNT approach the families offering advice and support.

"...as well as doing the physical check of the baby, it's advice and information for the parent,.. I am someone to talk to if they're having a hard time, if they're not sure what to do.. we provide emotional and practical support..."

Karyn, ECN, Informal discussion 20/5/01

Clearly the nurse makes no mention of the surveillance role identified in the previous discussion, she focuses only on the support-caring dimension. In fact another nurse goes further, explicitly defining the role as being a 'non-policing' role.

"..and I'm here to help you, with that you know I'll pass that information onto you, I'll share that information with you, and what you care to do with that information is up to you, I'm not here as the policeman of parenting."

Kerry, ECN Interview 14/11/02

The CFHNT present their work only in support and therapeutic terms, they distance themselves from the policing dimension (Bolton 2003). In this way the caring approach of the CFHNT shrouds the surveillance aspect of the Families First Program.

The notion of health visitor as 'mother's friend' has promoted informality in such contact, thus disguising the actual nature of state intervention being undertaken. This has been described as 'tutelage', a technique for ensuring surveillance and control over

the private spaces of family life in a manner that is non-coercive and does not promote collective resistance. (Peckover 2002: 370)

However the CFHNT disguising their conduct in this way is not unusual. When a person occupies multiple roles often only part of the overall image is identified with, as Bolton drawing upon Goffman (1961) notes:

It is not, however, necessary for the individual to be attached to each and every one of their multiple roles. It is possible to enact some of the obligatory activity whilst feeling quite distant from the overall image of the role. (Bolton 2003: 127)

In this situation the CFHNT are enacting the policing role while focusing on the therapeutic dimension. Such a response is noted by Holmes and Gastaldo (2002) as the traditional view of nursing theories, but they (and others) also challenge the understanding that there is a distinction to be made between discipline and caring (Gastaldo and Holmes 1999; Holmes 2002; Peckover 2002). Previously the argument has been put forward that therapeutic work is in fact based on surveillance practice (Bloor and McIntosh 1990) and recent research has termed a non-threatening approach, as articulated by the nurses above, as “gentle-surveillance” (Wilson 2001). Other research evidence shows that families have responded positively to this type of approach and the associated home visits by the early childhood nurses.

They (the families) thought it was important to have a professional nurse examine their baby, to receive feedback on how they had managed, to receive support and encouragement in child care, and to be able to stay at home in their own, safe environment. (Vehvilainen-Julkunen 1994: 673)

Having a “professional nurse” provide “examination, support and encouragement” reflects the conduct as “health visiting as therapy” (Cody 1999),

or alternatively “therapeutic intervention” (Cowley 1995). Engaging in similar conducts the CFHNT, as ‘therapeutic early childhood nurses’, are emphasising the caring and support role rather than the policing dimension.

This supportive approach has engaged CFHNT and families into an alliance that is non-coercive, simultaneously minimising acknowledgement of the policing role while maximising the pastoral role (Donzelot 1979; Wilson 2001). The pastoral role does not overcome the policing role but the former is used to encompass the latter (Holmes and Gastaldo 2002). For the CFHNT the local outcome is a successful appropriation of the two roles with the feedback from the parents reflecting this.

“I get a lot of positive feedback from my mothers, that they are pleased that we’re actually ringing them, that they don’t have to do the big phone chase to find the right person or the right clinic, that we’ll approach them and offer our services...”

Lynn, ECN, Interview 3/10/02

and similarly,

“...when I go into home visit now I have some, quite a few mothers comment that the service is so much better these days, and I say to them why or how’s it different? And they’ll make a comment saying, oh well it’s just so much more relaxed and there’s not all these rules any more and it’s much better, so I think that’s a really positive thing...”

Necia, ECN, Informal interview 6/8/02

The “fewer rules” corresponds to the parents desire for autonomy and self-regulation. Instead of the CFHNT telling the mothers what they should be doing, they are engaging the parents in a standardised assessment process with their tools and artefacts, offering suggestions and ideas, not rules and regulations. In doing so, the approach of the nurses directly responds to the desires of the

parents for autonomy, and they actively open their homes and lives to examination.

Such positive acceptance is not universal however, as there is resistance from some parents (Bloor and McIntosh 1990; Gastaldo and Holmes 1999; Wilson 2001; Holmes 2002; Peckover 2002). Parents resist by not taking up the early childhood service offered, by not answering questions or answering falsely, declining to follow the nurses' advice and by not coming back for the scheduled checks as recommended. In these ways the parents enact their power. When any of these acts of 'non-compliance' occur, the nurses respond in two interrelated ways. They label the parents as either 'good' or 'bad' depending on whether they have legitimised or disrupted the nursing work (Kelly and May 1982; May 1992) and secondly, and somewhat paradoxically, they understand and accept the outcome as the parents right to choose. One nurse, reflecting upon her own experience as a mother attending an early childhood service, explained her understanding as follows.

"I suppose being a mother going to a baby clinic myself with my own child and I had health professionals telling me what I should do with my child when I realised what I was doing was ok, and having them saying no this is wrong, and having, realising the impact that put on me, I thought I'm never ever going to do that to anybody again.."

Alison, CNS-EC, Interview 15/10/01

The statement by the nurse demonstrates her commitment to enacting a professional role that utilises the parents' capacity for self-management. That is, the CFHNT enact their expertise to govern the family by working with, and not against, the wishes of the family.

In their specialised clinical nursing practice the CFHNT are encouraging and supporting the parents' capacities and desires for self-regulation and autonomy (Cowley 1995; Björnsdóttir 2002; Holmes and Gastaldo 2002).

"...and yes talking to the mother, hearing what their reactions are and also you learn from the mums, you know they'll say something to you, and think hmm I didn't know that, gee that's a perfectly legitimate comment.. so you know you're learning constantly from them..."

Kerry, ECN, Interview 14/11/02

The CFHNT now understand the parents are co-producers of the service and knowledge (May 1992; Greenwood and Lachman 1996; Benner, Hooper-Kyriakidis and Stannard 1999; Berragan 1998; Irurita and Williams 2001); no longer are they ignoring the contribution and knowledge the families bring to the clinical encounter (Clarke 1999; Clarke and Wilcockson 2002; Ramprogus 2002). The nurses' new understanding enables them to learn from the parents while maintaining their professional expertise. The nurses' expertise is grounded upon, and disciplined by, a collaborative relationship with the parents-families where their mutual autonomy supports and necessitates the other.

"so it's really lovely to be able to, sort of give the support if that's what they want... but really important to be sure that's what they want and not feel that we as health professionals are making them do something they don't want to do..."

Sarah, ECN, Interview 11/10/01

Here the enthusiastic but cautious nurse, in emphasising the importance of maintaining the autonomy of the family, is demonstrating how the CFHNT community monitor and regulate their conduct in a 'professional' manner that embodies discipline and expertise. That is, she is enacting self-governance for the benefit of her community.

The overall outcome is that through the rationality of Families First, the State, the AHS, the CFHNT community and the parents have formed an alliance. This alliance enacts an extended relationship of accountability between all parties. Each has translated the objectives of the others into their own terms, whereby they collaborate to realise their now mutual ends.

Each of these diverse forces can be enrolled in a governmental network to the extent that it can translate the objectives and values of others into its own terms, to the extent that the arguments of another become consonant with and provide norms of its own ambitions and actions. (Miller and Rose 1993: 85)

Consequently the CFHNT community have changed the way they conceptualise and enact the work of the early childhood nursing; they are now experts who provide a specialised early childhood service to a maternal and child population. The nurses are now actively seeking an invitation to enter the private homes of families to enact their therapeutic expertise; they seek to examine, assess, educate and counsel.

6. Conclusion

This chapter has explored the fourth, and final, aspect of the technologisation of practice, that is, how the assemblage and appropriation of further technologies has strengthened the extended relationships of accountability and expanded the boundaries of practice. The utilisation of technologies, through the ongoing collaboration within their community of practice, has enabled the nurses to realise their specialised practice.

The CFHNT assembled and appropriated artefacts and tools from the AHS, Community Health and early childhood nursing to enact their practice. The

artefacts and resources are technologies that engage the nurses in the enactment of their clinical practice with each other, and simultaneously into extended relationships of accountability with their colleagues in the AHS, and other health and welfare professionals. Further still, with the assemblage of artefacts from the nurses' professional association the CFHNT have realised extended relationships of accountability with early childhood nurses in other locations. This conduct represents the alignment of local early childhood nursing practice with that across the AHS and also in line with their professional association. The expertise of the CFHNT is constructed by the continued enactment of the individual-community, subjective-objective, formal-informal and local-global practice dualities.

The CFHNT assemblage and appropriation of the technologies expanded practice beyond a simple physical examination of the baby to incorporate a significant therapeutic component. The nurses' expertise becomes realised through their appropriation of their technologies that shape their practice, and in doing so, they are able to exert a subtler but stronger influence upon the families they are working with. The nursing technologies enable the nurses to produce increasingly abstract information and knowledge, or *savoir*, about the families they are working with, and simultaneously provide space to allow the nurses to learn from the families creating a two way informing and standardising effect.

The technologies of the CFHNT community formalise and standardise practice enabling the nurses to enact a 'therapeutic early childhood nurse' in practice. The emergence of this therapeutic role coincides with the political strategy Families First, to draw the nurses into a dual-alliance with the State and AHS, and the parents-families they are providing services for. This alliance allows the State to govern families through supporting the expertise of the nurses and the nurses to enact their therapeutic expertise while promoting the family's self-regulation and autonomy. The alliance is made technical, and protected, through all the nursing resources, with a key role played by the IBIS. The IBIS significantly contributed to

the enactment of the 'therapeutic early childhood nurse' producing new information from practice; the information from the IBIS realised the 'maternal and child population' and the 'early childhood nurse population'.

This new information, in combination with the early childhood technologies, has enabled the CFHNT to examine, assess, normalise, educate and counsel the families they work with; that is, to realise the governing of the conduct of the families. In addition, the practice technologies, and in particular the IBIS, has increased the surveillance of the nurses themselves, subjecting them to the increased examination of their conduct; they have become the subjects of a project of governmentality simultaneously. Further still, the technologies and information from the IBIS, about both the maternal and child, and nursing populations, has been the construction of information, knowledge, skills and capacities of the CFHNT. That is, the realisation of a specialised early childhood discourse in this location. The CFHNT enactment of this discourse within their collaborative community has enabled them to engage in collaborative self-governance. Taken together, this has meant the CHFNT have also enacted a governmentality-communal self-governance practice duality.

The next chapter is the final chapter of the thesis. This chapter details the contributions of the research, answers the two research questions and discusses the technologisation of practice.

Chapter Nine: Conclusion and contributions of the research

If thought, learning and the construction of knowledge are not just influenced by social factors but are, in fact, social phenomena, then it makes enormous sense to provide occasions for interaction, joint deliberation and the collective pursuit of shared goals – that is, to nurture communities of practice. (Sullivan Palincsar, Magnusson, Marano, Ford and Brown 1998: 6)

1. Introduction

As detailed in the introductory chapter, the initial impetus for the research came from the researchers in the Simpson Centre who collaborated with the CCGRH at the UNSW. The initial brief was to explore innovation and change associated with the MINET program in the SWSAHS. As the research endeavoured to examine and interpret events in the AHS, a qualitative approach has been appropriate and specifically, a socio-logical ethnographic approach has been employed. This has involved looking at what people do, what they say and the artefacts they use in their daily activities, and then constructing a detailed description and interpretation of the community under study. In pursuing this endeavour, exploring practice within a health service organisation, and in particular a public health service organisation, is a particular feature of this research. In this way, the research is an empirical study of change within a public health care setting, and as such is a response to a call from a number of writers (Rochon and Oxman 1997; Casebeer and Hannah 1998; Wise 1999; Carignani 2000; Brown, Waterhouse and Flynn 2003; Grol and Grimshaw 2003).

In the enactment of the research, three influences dynamically interwove to shape the outcome. Firstly, the CCGRH academic community provided a context in which my explicit knowledge and knowing has been enacted and continually developed. Secondly, the unfolding ethnography identified the importance of the IBIS to the early childhood nurses and the MINET program. The construction, mobilisation and refinement of the IBIS has been the recent story of early childhood nursing in the SWSAHS. The third influence was the necessity to construct a manageable research topic from the initial broad brief within the evolving fieldwork context. Discussions with staff of the AHS revealed that while the MINET idea had been around for some years, implementation was progressing slowly. The assumption of the IBIS and MINET under the Families First program had added a further layer of complexity to the context.

Through these three influences, the IBIS and the early childhood nurses became a focus for the research. Empirically the research initially examined recent historical events. That is, how the IBIS was constructed by collaboration of the nurses of the Kidz clinic and the HORT. The research then considered the mobilisation and ongoing refinement of the IBIS by nurses in community health from across the AHS, which led to further IBIS-nurses, IBIS communities and an 'IBIS practice network'. The IBIS communities and the associated practice network contributed to the emergence of the MINET program in the AHS. The exploration of the mobilisation of the IBIS led to examining early childhood practice in the present day. This has involved ethnography with the early childhood nurses who comprise the CFHNT in the Liverpool Sector of the AHS. The empirical focus became how the CFHNT was established and then how they constructed their practice including the use of the IBIS.

In taking this focus the research has taken up the quest to examine how a group or team practise, rather than a focus on individuals' tacit knowing (Cook and Yanow 1993; Barley 1996; Hendry 1996; Leonard and Sensiper 1998; Richter 1998; Hall 2001; Jones 1997b in McCallin 2001). The research has explored the

interaction between people and the artefacts they construct, refine and are shaped by (Latour 1986, 1992; Gagliardi 1997; Araujo 1998). In doing so, the research has examined how the technologies of the early childhood nurses have come to be stabilised and normalised (Yoxen 1989; Braa and Vidgen 1999). In detailing how practice is constituted and mediated by technologies that are appropriated and mobilised as resources for practice, the research is one response to a call from Latour (1986) for such endeavours. The research supports the finding that contrary to expectations innovation and change in the public sector has, and continues to be, an active positive achievement (Frissen 1999; Rainey 1999; Wise 1999).

To explain and interpret the IBIS, or alternatively the practice of early childhood nursing, the research has drawn on four theoretical perspectives. That is, the research has utilised the community of practice theory, idea of an immutable mobile and interrelated notions of governmentality and governance. Consistent with these theories, the research has also been informed by a practice approach, a post-modern view of organisations and a community view of knowledge. Together they have led to a view of the mutual enactment of learning, organising, practice and knowing, and two interrelated questions were identified as important. That is, firstly, what enables the sharing of knowledge between peers in different communities? Then secondly, how is practice established and sustained in a specific context?

With this theoretical basis and pursuing the two questions, this research has demonstrated how collaboration becomes necessitated under pressure of enacting increasingly complex work activities, an outcome being changing practices and extended relationships of accountability, which enacts discipline while realising expertise. The technologisation of practice is the term I have constructed to use and define this integrated process and outcome. That is, in this research the technologisation of practice refers to the delicate weave of artefacts, conduct and processes through which the conceptualisation and

enactment of early childhood nursing has become possible, far-reaching and increasingly standardised. The technologisation of practice is the enactment of a number of mutually enabling practice dualities, which together simultaneously discipline and realise expertise (Poster 1990 in Sewell 1998; Barker 1993; Sewell 1998; Johnson 2001). Recall that the idea of a duality is used to consider two items that are not defined as opposites of each other, but rather are complementary, are mutually constitutive, take place together, and require and enable each other (Giddens 1984b; Wenger 1998a; Schultze 2000). The interrelated practice dualities are individual-community, subjective-objective, local-global, formal-informal and governmentality-communal self-governance.

The technologisation of practice is composed of four aspects. The first aspect is standardising the conceptualisation and enactment of practice through constructing a multi-dimensional practice resource within a community of practice. The second aspect is the mobilisation and refinement of the multi-dimensional practice resource to realise a practice network involving extended relationships of accountability. The third aspect is the amalgamation of the organising and service delivery roles within a collaborative community of practice, that is, accountability becomes an ongoing collective achievement. The fourth aspect is the collaborative community assemblage and/or appropriation of further technologies into practice, thereby strengthening the local and extended relationships of accountability and expanding the boundaries of practice. Through the technologisation of practice, new identities, discipline and expertise are simultaneously realised.

This final chapter of the thesis has five sections, which are presented in the following order. The next section, section two, notes the three contributions made to the community of practice theory. Section three addresses the two questions posed by the research. Then in section four, each of the four aspects of the technologisation of practice and the practice dualities will be noted. Section five discusses possibilities for future research, and the final section is section six,

where the enabling and constraining effects of the technologisation of practice are discussed.

2. Contributions to the community of practice theory

This second section discusses the three contributions the thesis makes to the community of practice theory.

The first contribution has been to identify similar concepts to the community of practice theory, as proposed by Lave and Wenger (1991) and detailed by Wenger (1998a), within the literature. This contextualising has shown that while a number of other similar ideas exist, the community of practice concept stands out for two reasons. Firstly, the community of practice concept is more theoretically developed than other similar ideas, and secondly, the community of practice concept leaves as an open question as to whether the community is beneficial or harmful. Other similar concepts imply, directly or indirectly, that the community being formed is a positive one, whereas with a community of practice this may not be the case.

The second contribution is to support the argument that a team established by an organisation can become a community of practice; in this way the research supports the findings of other writers (Raelin 1997; Hildreth, Kimble and Wright 1998; Kavanagh and Kelly 2002). The community of practice literature has previously stated distinct differences between formal work groups and communities of practice (Wenger 1998a; McDermott 1999c; Wenger and Snyder 2000; Wenger et al. 2002). This research has demonstrated how a team established by an organisation became a community of practice, and in this case a collaborative one. In short, the team became a community as they developed trust (Kavanagh and Kelly 2002), emotionally engaged with one another (Mirvis 1997; Bourdieu 1998), pursued shared understanding (De Michelis 1997; Raelin

1997), formed a shared history of learning (Gold and Watson 2001), constructed and enacted overlapping roles (Nicols 2000; Lang 2001) and collaborated to pursue knowledge (Wenger 1998b; McDermott 1999c; Wenger and Synder 2000). To draw upon the words of Wenger (1998a: 74), the team became a community “because they sustain dense relations of mutual engagement organised around what they are there to do”. This research has shown that even though a team may be organisationally designed, they can become a community of practice by their collaborative interactions, pursuit of knowledge and construction of a common practice.

The third contribution this research makes to the community of practice theory is to show that the resources of a community are integrated and multi-dimensional. As has been detailed in chapter four, to enact the dimensions of a community of practice and/or modes of belonging the participants draw upon the one ‘pool’ of multi-dimensional resources. That is, for example, an artefact is part of the community’s shared repertoire, it provides a point around which the participants engage and collaboratively pursue their joint enterprise. The research has proposed two changes to Wenger’s theory, to the dimensions of a community and modes of belonging, to reflect this new interpretation.

In summary then, the three contributions are, firstly to contextualise the concept with the broader literature, secondly to support the argument that a team can be a community, and thirdly to show that resources are multi-dimensional and that this points to two changes to the theory. In the next section, attention is turned to the two questions that the research has sought to answer.

3. The two questions

This section addresses the two interrelated questions that this research has sought to answer. Correspondingly, this section has two parts, with one part

directed at each question. That is, firstly, the research seeks to explain what enables the sharing of knowledge between peers in different communities and secondly, how practice has come to be established and sustained in a specific context.

3.1 The first question: What enables the sharing of knowledge between peers in different communities?

The first question is “what are the processes and mechanisms needed in order for employees to share their common knowledge with their peers in other communities of practices?” or alternatively, what enables people within an organisation to share their knowing (Dixon 1997; Leonard and Sensiper 1998; King and Rowe 1999; von Krogh 2002; Wenger, McDermott and Snyder 2002; Pan and Leidner 2003). Based on the research reported on here the following answer is suggested.

Professionals can and will share their knowledge and tacit knowing with their peers from different communities when they are able to construct extended relationships of accountability. These relationships are realised by having a purpose for collaboration, engagement through learning-as-working activities and the sharing of practice artefacts.

For the sharing of knowledge and tacit knowing the professionals concerned need to have a purpose or reason to drive their collaboration. The nurses from the Kidz clinic were able to share their knowing with their nursing colleagues in other places because they were endeavouring to expand the use of the IBIS artefact. The expanded use of the IBIS artefact brought mutual benefits to both parties, that is, the capacity to increasingly standardise, make visible and develop the expertise associated with the work of early childhood nursing. This purpose provided the motivation to overcome the significant barriers that had

been constructed between the services in different locations. Without such a purpose, they would not have had the professional necessity or the organisational reason, that is, legitimacy, to engage together as they did.

The sharing of knowledge and tacit knowing is realised through engaging in “learning-as-working” activities (Brown and Duguid 1991, 1998), rather than formal educational or ‘training’ sessions. Recall that the nurses engaged with their colleagues in different places through conducting ‘preparatory sessions’. In these sessions, they identified the similarities between their practices and as clinician-to-clinician discussed and addressed common work issues. That is, through the opportunity for dialogue, they shared their knowing (Gergen 1985; Nonaka 1994; Raelin 1997; Lang 2001); Hutchins (1995) has described the embedding of knowing into similar contexts as “propagation work”. An important aspect of the learning-as-working activities is that they involve face-to-face interactions. This type of interaction is the means par excellence to share tacit knowledge (Lave and Wenger 1991; Cohen 1998; Wenger 1998a). By focusing the ‘preparatory session’ upon one service at a time as they did, the clinicians were reinforcing the social process of learning (Billett 1996; Wenger 1998a; Eraut 2000).

The learning-in-working activities provide time for the professionals to collectively reflect upon their practice and in doing so, aimed to ensure the participation of all workers, an action noted as conducive to bringing about improved practice and change (Beer 1990; Nadler and Trushman 1999; King and Rowe 1999; O’Brien 2002). The involvement of all participants has the potential to establish a positive reinforcing cycle of knowledge sharing. That is, cooperation breeds trust and trust breeds cooperation (Nahapiet and Ghoshal 1998; Hall 2001), individual reputations are enhanced by participation (Braskamp and Maeher 1986; Smith and Farquahar 2000; Wasko and Faraj 2000) and when participants know such conduct is expected, they are more likely to participate (Davenport and Prusak 1997; O’Dell and Grayson 1998). In this way, a climate that fosters trust and

personal networks among peers is one of the most important conditions for spreading technical and administrative knowledge effectively (von Krogh, Ichijo and Nonaka 2000).

The sharing of knowledge and tacit knowing is realised through the mobilisation of practice artefacts (Gagliardi 1997; Tuomi 2000). Also able to be regarded as “immutable mobiles” (Latour 1986), these artefacts enable practitioners to engage in thought and action, rather than just hearing about practice (Wenger 1998a). As immutable mobiles, the artefacts enable the sharing of the explicit clinical knowledge necessary for practice and also the learning of the embedded structure and order of practice, as is realised through using the artefacts. As Timmermans and Berg (2003) have noted the artefacts “standardise practice”, that is, align the clinicians’ conduct in different locations in increasingly similar ways without turning them into automatons. The sharing and common use of practice artefacts is the enactment of a common discourse amongst the clinicians. A key strategy that promotes and reinforces a common discourse is the sharing of stories from practice (Zuboff 1988; Orr 1990, 1996; Brown and Duguid 1991, 2000; Lave and Wenger 1991; Sach 1995; Wenger 1998a). Such conduct strengthens the bonds between the participants and increases the knowing through conveying the rich details of practice.

3.2 The second question: How is practice established and sustained in a specific context?

The second question the research addresses is, how is practice established and sustained in a specific context? (Maudsley and Strivens 2000; Hayes and Walsham 2001), or alternatively, how does knowledge become formulated and mobile? (Araujo 1998). Based on the research reported on here, the following answer is presented.

Practice is established and sustained through the technologisation of practice. That is, the technologisation of practice refers to the actions and processes by which the conceptualisation and enactment of early childhood nursing has become increasingly prescribed and embedded in the resources for practice. The resources for practice incorporate the clinical forms and tools, organisational and professional policies, informational review processes and accountability relationships that extend way beyond the site of early childhood nursing. The nurses' collaboration and participation to construct and refine practice simultaneously enacts their community and sees them construct, assemble and appropriate their resources for practice. Through the technologisation of practice, explicit knowledge becomes distributed within the resources and tacit knowing becomes distributed across and is continually enacted by the community.

The technologisation of practice demonstrates how knowledge becomes inseparable from people and practices in a particular time and place, reflecting the shift of emphasis from knowledge to knowing (Blackler 1995; Barley 1996; Brown 1998; Wenger 1998b; Cook and Brown 1999; Hayes and Walsham 2001; Brown and Duguid 2000; Orlikowski 2002).

Context is not just something in the environment (data), but partly *conceptual* and partly about other people. A social system is not just an organisation, but a *choreography of interaction*, a set of practices for doing things in certain places at certain times. Knowledge is not just technical, but is about the group *social knowledge*. What people know and do is organised around their roles as social actors. (Clancey, Sachs, Sierhuis and van Hoof 1998: 853; italics in original)

Knowing is constructed, enacted and maintained in a defined local context through the interaction of people and their resources. Becoming IBIS-nurses through negotiating the meaning of words, actions, material artefacts and events, the nurses in their community construct knowledge and engage in the practice of knowing. Hence, through participation within the community, individually and

collectively, they became knowledgeable (Lave and Wenger 1991; Renshaw 1998; Wenger 1998a; Gherardi 2001) thereby learning both the explicit and tacit knowledge components necessary to participate in their collaborative practice (Sveiby 1996; Tsoukas and Vladimirou 2001).

The research has revealed how practice and knowledge is formulated, sustained and made mobile by constructing or assembling multidimensional resources. These resources are “lines of force” (Rose 1999) that map out and sustain the conduct of the nurses and the new networks they have initiated. These resources can have up to three dimensions as an artefact for practice, a technology and an immutable mobile. Some resources are only two dimensional, for example a clinical policy is an artefact and a technology, whereas others, for example the IBIS and the EPDS are three dimensional in that they also act as immutable mobiles. Reviewing the IBIS provides an example how such a multidimensional resource can be constructed and how it shapes practice.

The nurses collaboratively enacted their work and reflected upon their work. Collectively they discussed their experiences and engaged in the action of inscription (Latour 1986), conduct which produced a document that represented their collective practice experience. Then, through the action of “continuous prototyping” (Mascitelli 2000) they collaboratively transformed the document into a practice artefact (Wenger 1998a) and simultaneously shaped their practice through the use of the artefact; in this case, the artefact is the IBIS. Through this conduct the nurses embedded into the IBIS artefact the explicit knowledge of clinical practice issues. This conduct also embedded a structure and order for exploring issues with a family; to rephrase, they “delegated” these requirements to the form (Latour 1992; Feenberg 1999). That is, the IBIS artefact is also a “technology” (Hill 1991; O’Malley 1996; Rose 1999) that shapes their conduct within their community and with the clients they provide a service for. The IBIS artefact was constructed as a paper form linked to a computer database. Able to be reproduced without alteration, the clinical forms can be transported to different

locations, that is, to different nursing clinics, completed and returned to a central locale for collation. To rephrase this in Latour's (1986) terms, the artefact has the properties of being mobile, immutable, presentable, readable and combinable, and as such is an "immutable mobile".

In this way, the representation that the IBIS artefact provides the nurses is multi-dimensional. The IBIS represents the collaborative understanding held by the nurses; the IBIS represents the actions, skills and behaviours displayed by the nurses in their practice; and the IBIS represents the data within and the information made possible through the computer database. Explicit knowledge is embedded within the artefact and tacit knowing becomes distributed across, and is continually enacted by, the collaboration of the community through the use of, and reflection on, practice with the artefact. That is, the IBIS represents both the explicit knowledge and tacit knowing necessary for collaborative practice and generated by that practice. Through the conduct of constructing the IBIS artefact, knowledge is formulated and made mobile.

While other artefacts, for example the organisational and clinical policies, may not have the inscription capacity, nevertheless their construction or assemblage and appropriation, formulates and makes mobile the knowing of the nurses. Individually and together, the multidimensional resources are "lines of force" (Rose 1999) that map out and sustain the practice of the nurses. These lines of force make technical and visible the work of the nurses and are used by the nurses, individually and collectively, to monitor and discipline their individual and communal practice. At any and all times, individually and collectively the nurses can examine their conduct, or that of a colleague, against the written expectations or how these expectations are being interpreted within their community. Competency is learning and knowing how to engage with this tension so that the power of the role is enacted. This is the dynamic tension that the lines of force realise for the nurses; they construct and enable expertise but simultaneously they are continually surveyed and disciplined in the very process.

This concludes the third section that has discussed the two questions the research has addressed. The next section considers each of the four aspects of the technologisation of practice and the practice dualities.

4. The technologisation of practice

In this section, which is comprised of five parts, each of the four aspects of the technologisation of practice and the practice dualities will be noted.

4.1 The first aspect: Standardising practice

The research has shown that an individual and their community need each other to construct and refine their practice. An individual cannot practise effectively without collaborating with their colleagues, as the community, which is formed through the participation of all members, holds the tacit knowing necessary for practice. This is the enactment of the individual-communal practice duality, as collaboration and participation with colleagues is necessary for the ongoing communal development of expertise. To rephrase somewhat paradoxically, professional autonomy and identity are anchored in collaboration within a community of practice; professional legitimacy comes from belonging to a community. This gives rise to the first aspect of the technologisation of practice, which is standardising the conceptualisation and enactment of practice through constructing a multi-dimensional practice resource within a community of practice. The research shows that this is achieved through the following process. People engage in learning-in-working activities, collaborating to construct a prototype artefact that maps their work and identity as workers. The prototype is transformed into an artefact within a practice through constructing and enacting standardised technologies.

4.2 *The second aspect: Extended relationships of accountability*

The research has shown that the situatedness of practice necessitates a subjectivity-objectivity duality, whereby individual and communal experience is drawn upon to see through the otherwise opaque nature of statistics and information. Competency in practice requires being able to interpret and maintain the relevance of distant information, or boundary objects, and enact a local response that is simultaneously aligned with the local community and the broader organisation. In this way competency realises a local-global duality, whereby the community's local understandings are informed and shaped by distant issues. This gives rise to the second aspect of the technologisation of practice, which is the mobilisation and refinement of the multi-dimensional practice resource to realise a practice network involving extended relationships of accountability. These relationships of accountability are within a profession and also with other professionals.

4.3 *The third aspect: The ongoing enactment of accountability*

The research has shown that through the formal-informal duality practice is increasingly collaboratively conceptualised and enacted, and thereby standardised and disciplined. Formal meetings and informal interactions become ritualised conduct through which knowing is constructed and shared. Participation in the rituals enacts accountability to a community and associated practice; organisational and/or managerial control is supplemented with community control, or alternatively, explicit control is supplemented with subtle control. The community enacts a practice that is the amalgamation of the organising and service delivery roles through this duality, so that accountability becomes an ongoing collaborative achievement. This is the third aspect of the technologisation of practice. Through this conduct the research shows that a team can become a collaborative community by constructing an accountability

context, integrating the organising and service delivery activities through formal meetings and informal interactions. In doing so the community assumes responsibility for their organising, learning, practice and knowing.

4.4 The fourth aspect: Discipline and expertise

The research has shown that a governmentality-communal self-governance duality is realised through a community's assemblage and appropriation of resources - tools and artefacts – or “technologies” for practice. In doing so, the community reinforces and expands the extended relationships of accountability. Through the technologies the community constructs, standardises, makes visible and aligns personally, professionally and organisationally their practice. The technologies simultaneously construct the interdependent populations of the professionals and the clients, enabling the former to govern the latter by enabling them to construct themselves within a socially negotiated set of meanings. At the same time then, the community in defining the use of such resources as competent practice is disciplining this conduct, that is, the community engages in self-governance. Expertise and discipline are achieved together. This is the fourth aspect of the technologisation of practice, whereby the collaborative community assemblage and/or appropriation of further technologies into practice, strengthen the local and extended relationships of accountability and expands the boundaries of practice.

This concludes this fourth section where each of the four aspects of the technologisation of practice and the practice dualities has been discussed. The next section considers possibilities for future research.

5. Future research

This fifth section of this final chapter presents ideas for future research. The following six ideas are directions for future research that are suggested by this study.

Firstly, research could focus upon similar low-level organisationally established teams, to explore if they are able to achieve the enactment of a community of practice by reifying aspects of their practice through technologisation. Such research could examine whether the conducts described here are replicated in other organisations and by other professionals.

Secondly, in the course of exploring the technologisation of practice this research has identified a number of practice dualisms that are enacted, further research could explore whether other such dualisms exist and if so, how they shape the enactment of practice.

Thirdly, the current trend towards introducing computer technologies into clinical practice provides avenues for further investigations into the technologisation process and outcomes. Do such projects mobilise and engage clinical staff in collaborative conducts that assists their practice, or are the informational technologies perceived as being external impositions by managerial interests for their ends?

Fourthly, an area that would be interesting to explore is how do professionals (including nurses), and families, resist tools and artefacts that increasingly populate the clinical interaction? When new artefacts are imposed upon clinicians, how do they accommodate them into their practice? When a family resists an artefact what is the response(s) enacted by the professionals?

Fifthly, as this research has highlighted the importance of a community for learning, innovation and change, an important avenue for research is how do individual practitioners, or even groups of two or three, undertake such activities? How do they obtain opportunities to engage in the sharing of tacit knowledge with their colleagues? Does the lack of such opportunities mean that their practice development is restricted? Are individual practitioners less “disciplined” but conversely, do they develop less “expertise”?

Sixthly, as the research has shown that within a community of practice the technologisation of practice replaces authoritarian management with communal self-management, how does this affect how the organisation manages the professionals? Should management be targeted at the community or at individuals, as has been the norm?

The following section, the final section of the chapter and thesis, considers the enabling and constraining effects of the technologisation of practice.

6. The enabling and constraining effects of the technologisation of practice

This section is the sixth and final section of this chapter, and also of the thesis. The section discusses the enabling and constraining effects of the technologisation of practice.

Through the technologisation of practice, practice has become more complex, detailed, skilful and interdependent between colleagues and across professions, both locally and in distant places. As the name suggests, the significant factor in this development has been the central role of technologies in shaping practice and the community that encompasses and sustains such practice. The formation

of a community of practice is a central part of the technologisation of practice, representing the embedding of power into the community through the enactment of 'communalised' collaborative practices (Arendt 1970; Feenberg 1999). In turn, the collaborative and participative processes of the community enables the power of the technologies to be harnessed, thereby simultaneously realising discipline and expertise.

The technologies have simultaneously made work increasingly visible and constructed the expertise of the workers; the technologies have transformed the participants from workers into 'experts' (Renshaw 1998). The collaborative negotiated construction, assemblage and appropriation of the technologies by a community of practice has transformed worker autonomy into communal accountability. An individual has been shown to require a practice community to be able to enact their practice; a practice that is communally constructed and sustained through formal and informal activities. Collectively workers enact distributed leadership, mentoring and surveilling each other, and in doing so providing "affordances" that scaffold access to the knowledge and knowing of their community (Cook and Brown 1999). To put this differently, they provide affordances that discipline while enabling expertise. Their collaboration and participation in this way, replaces authoritarian management with self-management (Johnson 2001). Other researchers have described this type of outcome as relative autonomy within tight control (Freidman 1977), regulated autonomy (Hoggett 1996), and more recently as self-governance (Courpasson 2000; Flynn 2002).

Collectively the practice community has appropriated more and more technologies that standardise their conducts, but by definition necessitate increased subjectivity in practice. That is, there is recognition of the increased tacit knowing associated with the technologisation of practice. However, as Timmermans and Berg (2003) note, standardising does not turn people into automatons. The appropriation of further technologies has increased the visibility

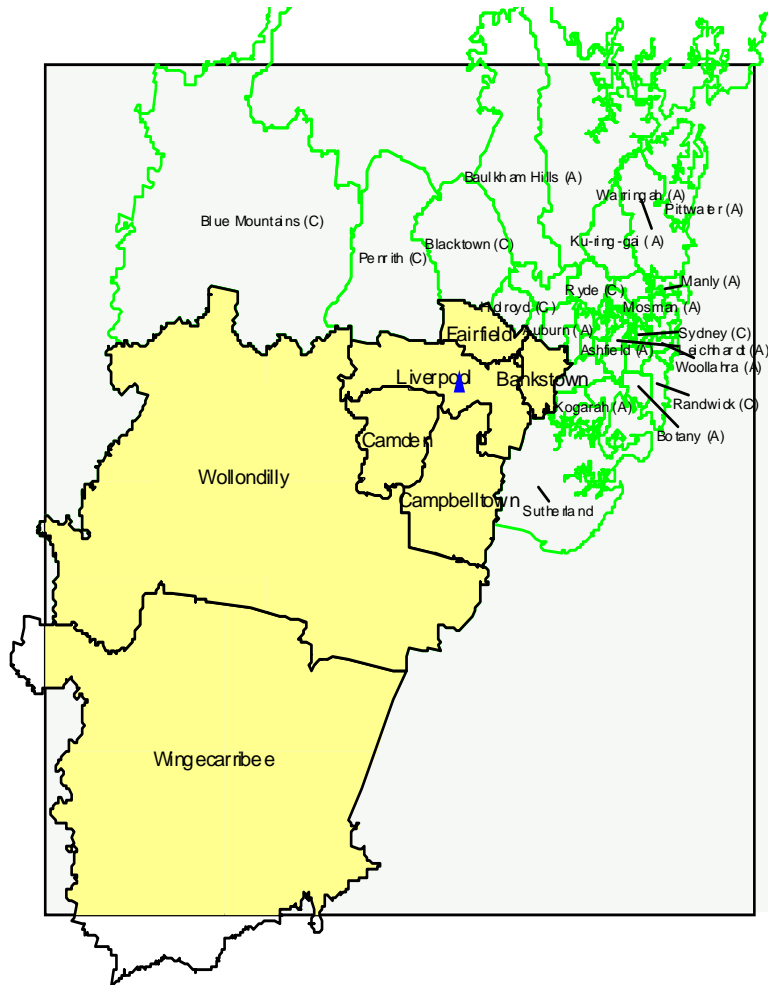
and activity potential of the community, which in turn has promoted increased responsibility and accountability, particularly through those resources with computing capacities (Giddens 1984; Harvey 1989; Zuboff 1988). But at the same time, this has meant that practice has become even more complex and opaque. While the informing technologies, for example the IBIS, can produce even more detailed abstractions about work, to interpret such information requires an increased knowledge about that practice being represented. Subjectivity is increasingly recognised as an important necessity when considering information and statistics (Cowley 1995). Only those with a similar discourse and practice can properly interpret the information in question, which means that the role of the community of practice becomes even more vital. In other words, the power of the specialised community of practice is reinforced (Arendt 1970; Feenberg 1999).

A community's enactment of practice realises, is shaped by and in turn strengthens, extended relationships of accountability with peers and other professionals in distant locations, and also the state. Technologies are utilised as "boundary objects" (Star 1989), "intermediary objects" (Boujut and Blanco 2003) and/or "coordination devices" (Timmermans and Berg 2003) to align and network professionals over extended distances. Through such conduct, and within a profession, practice is standardised and across professions practice is interlinked. The state recognises and promotes such conduct by acknowledging, encouraging and promoting the 'expertise' that is being enacted and the partnerships and collaborations that realise extended networks of experts. The state utilises the expertise of the professionals for the social control of the population. That is, for the professionals the 'cost' of the recognition of their expertise is to be enrolled as agents of the state in the project of governing the population. The technologies that enable practice are simultaneously now utilised to make visible, monitor, evaluate and regulate the conduct of the profession and population in question.

There is a tension between the possible benefits and costs associated with the technologisation of practice. The possible benefits are a more interesting and expanded work role, necessitating the ongoing development of professional skills and tacit and explicit knowledge for practice; the increased support of a collaborative practice community and the increased discretion within practice; an increasing level of emotional engagement and satisfaction gained through work, and the recognition and enhanced status that comes from having 'expertise'. In contrast, the possible costs can be just as significant. That is, increased responsibility and associated stress from an expanded work role; an expanded knowledge base and skill requirements to continually keep abreast of; an increasing number of professional relationships to continually negotiate, both within and across professions; and the expanded involvement in, being held accountable for, the social control of the population. How professionals manage to continually negotiate a balance between the benefits and costs, will no doubt be influenced by a number of factors including, the organisations in which they work – what sort of resources and time is provided for ongoing professional collaboration and development, the requirements of the state in regulating (directly and/or indirectly) the professions and the populations they work with, and, not least of all, the actual demands for services. As this dynamic tension is continually played out, what can be stated with a high degree of certainty, is that the technologisation of practice is a process, and outcome, that will continue to be enacted.

Appendixes

Appendix One: Map of the SWSAHS

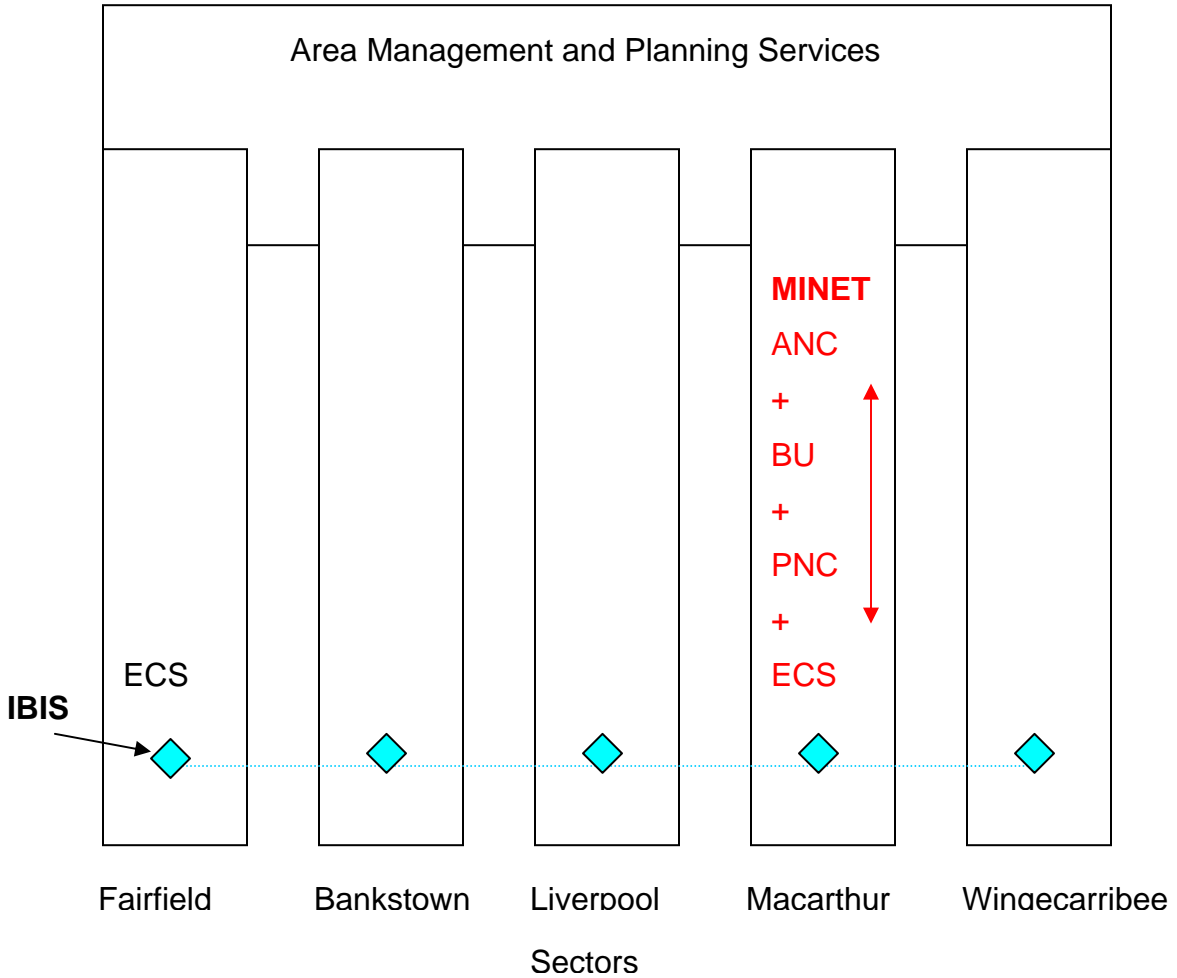


South Western Sydney Area Health Service Map

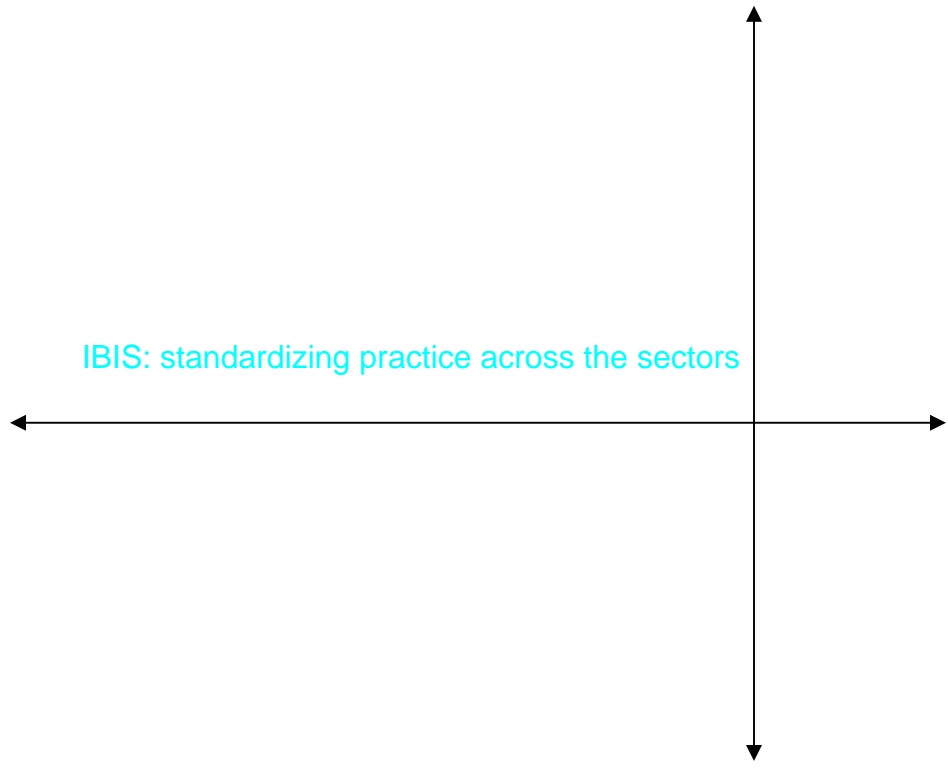
Five Sectors

- Bankstown
- Fairfield
- Liverpool
- Macarthur
- Wingecarribee

Appendix Two: The South Western Sydney Area Health Service



- MINET - Mother and Infant Network
- IBIS - Ingleburn Baby Information System
- ECS - Early Childhood Service
- PNC - Post Natal Care
- BU - Birthing Unit
- ANU - Antenatal Care



IBIS: standardizing practice across the sectors

MINET: collaboration and integration within a sector

Appendix Three: Similar ideas to the community of practice concept

As has been discussed within the body of the thesis (in chapter four) the community of practice concept offers an explanation of how people learn, work and change together, situating their activities within a social and material context. However, in the literature the community of practice concept is not unique with other writers having presented similar ideas, albeit with a different names. Similar to the community of practice concept, the other writers all attempt, in varying degrees of complexity, to address and integrate aspects associated with knowing, organising, learning and practice. The idea that comes closest to the community of practice comes from Constant (1980, 1987) who has conceptualised a strikingly similar idea - a community of practitioners - prior to and independent of Lave and Wenger. Similarly, the idea of an “occupational community” also explores how and why people behave as they do within a workplace. Essentially these different ideas, and terms, reflect a common theme - that people together construct meaning and purpose that is reflected in their words and actions, and through this knowledge is constructed and learning is enacted.

With the exception of the two noted, that is Constant’s idea and occupational communities, Wenger’s ideas are much further developed and complex than the others. Also Wenger, in contrast to many of the others, particularly emphasises the integration of mind and body as a key to understanding practice, learning and identity. Further, within these similar ideas there is an important assumption, sometimes made explicit but at other times left implicit, that separates them from that of the community of practice. The other ideas, directly or indirectly imply, that the ‘community’ being constructed and evolving is a positive and harmonious one; this assumption is not shared by the community of practice theory (Wenger 1998). In these three ways – complexity in detail, integration of mind and body, and the potential of a harmonious or conflictual community - Wenger’s community of practice theory diverts from these other similar ideas.

The similar ideas are now listed below and then a short description of each is detailed over the following pages:

- Communities of concept users (Toulmin 1972)
- Thought collectives (Fleck 1979)
- Community of practitioners (Constant 1980, 1987)
- Occupational community (Van Maanen and Barley 1984)
- Ecologies of learning (Levitt and March 1988)
- Learning community (Senge 1990)
- A self-organising team (Nonaka 1994)
- Communities of knowing (Boland and Tenkasi 1995)
- Community of interaction (Nonaka and Takeuchi 1995)
- Community of purpose (Warren 1996 in Liedtka 1999)
- Knowledge activists (von Krogh, Nonaka and Ichijo 1997)
- Community of competence (Snowded 1999)
- Communities of interest (Arias and Fischer 2000)

- Communities of concept users (Toulmin 1972)

This idea is presented in a book that examines the development of scientific thought, human understanding and related topics. The book locates the use of scientific concepts within a social context, that is, the individual exists within a collective group to know and understand. The idea of a 'community' is not defined and is used in a very broad sense including corresponding to society, congregations and professions. Learning is explained to occur through the process of enculturation into the norms and expectations of the group.

- Thought collectives (Fleck 1979)

The idea of a "thought collective" is located within a book about the development of scientific facts. The original book was written in German in 1935 and then translated into English in 1979, and lies within the literature on research into the sociology, history and philosophy of science. The book explores how the development of scientific facts occurs within a social process. The participation of individuals within a thought collective generates something new through a complex process of social consolidation. A thought collective is, as the name suggests, cognitively orientated where knowledge and learning is through the mind.

- Community of practitioners (Constant 1980, 1987)

Constant uses the term 'community of practitioners' to refer to a number of organisations that comprise a community (centred around an artefact) and which in turn are made up of individuals who are themselves members of communities of practitioners. The term "practitioners" is used to emphasise that individuals are the constituent parts. However, the whole term is used to refer to either an organisation or a group of individuals depending on the level of analysis in the technology hierarchy. Technology is used at different levels with three different

meanings: at the individual practitioner's level technology is regarded as knowledge; at the organisational level technology has a social function; and at the technological system level technology has an instrumental meaning. Using Constant's example of the artefact of a car to explain - at the technological system level the technology is the car; at the organisational level there are then different types of cars, that is, a Honda or a Porsche, hence the different social functions of a car (family vehicle or sports car); finally, at the individual level technology relates to an aspect of one of the cars, for example tool makers for a Honda, or sales staff for a Porsche. Similar to Wenger, Constant offers an explanation of how a community forms and enacts their practice; he uses the term tradition to refer to the concrete actions taken by a community. Through enacting the tradition of a community, an individual's identity is constructed.

- Occupational community (Van Maanen and Barley 1984)

The idea of an "occupational community" is initially presented in an annual journal examining issues in organizational behaviour. From this beginning, there is a body of literature that explores the idea of occupational communities. The authors present a lengthy article exploring occupational norms, loyalties and how communities exert influence on behaviour. They argue that the quest for occupational self-control provides the motivation for development of a community. An occupational community promotes self-control and collaborative autonomy for members. Issues of self-control, conflict and participation within a workplace are explored. The idea has been applied to professions that work in a variety of locations, for example nurses, doctors, police officers or engineers. That is, professions that share a common occupational background, work at a variety of sites and are networked with one another in some way, either organisationally and/or professionally.

- Learning community (Senge 1990)

The idea of a “learning community” is presented in a book about improving learning in organisations. The team is taken to be the basic unit within an organisation and the argument is made that organisations need to generate a common identity for learning, hence a learning community. The book explores how teams learn and emphasises the collective nature of thought. To learn individuals and teams must master the process of dialogue involving participation and reflection. Five competencies are identified to build an organisation that can learn: systems thinking, personal mastery, mental modes, building shared vision and team learning.

- A self-organising team (Nonaka 1994)

This is a lengthy paper that focuses on the organisational process of knowledge creation. Noting a distinction between explicit and tacit knowledge (a false distinction as discussed within the thesis), the paper explores how individuals and organisations can enlarge and enrich their knowledge. The argument is made that knowledge can be created through the interaction of tacit and explicit knowledge. Nonaka presents a model of knowledge conversion known as SECI: socialisation (tacit to tacit knowledge), explicit (tacit to explicit knowledge), combination (explicit to explicit knowledge) and internalisation (explicit to tacit knowledge). The organisation is focused upon as an important context in which an individual’s knowledge develops. Exploring the interwoven issues of organising, knowledge and learning the argument is made for a “hyertexted” organisation, the use of “middle-up-down” management and the “self-organising team”. The author locates knowledge creating activities as the task of all employees within the self-organising team.

- Communities of knowing (Boland and Tenkasi 1995)

The “communities of knowing” idea is presented in an article within the organisational science literature. The idea is used broadly to describe teams, groups, product lines, professional specialities and divisions. The authors argue that communities of knowing interweave across all levels of the organisation and individuals are members of multiple communities. They use “knowing” in the label as they do because of a focus on knowledge intensive firms and the interaction of different expert knowledge groups in the process of knowledge creation. They introduce two interrelated ideas, perspective making (understanding within a community) and perspective taking (importing ideas from outside a community).

- Community of interaction (Nonaka and Takeuchi 1995)

The idea “community of interaction” is presented in a book that offers a model for the construction of knowledge; the book builds upon the previous ideas presented in a paper by Nonaka (1994). The book focuses upon how organisations in Japan use both explicit and tacit knowledge to enable learning and innovation. The central role of the team in creating a shared context in which individuals interact is highlighted; learning occurs through social interaction, hence the importance and need for a “community of interaction”. The authors argue that a facilitated team acts to create and document knowledge. The argument is made for an understanding of knowledge to incorporate both explicit and tacit knowledge. Nonaka’s SECI model of knowledge conversion is detailed.

Three key characteristics of learning are identified. Firstly, metaphor and analogy, which involves drawing upon intuition and insights. Secondly, personal to organisational knowledge, which locates the individual within a group using the process of dialogue, discussion, reflection and observation. Thirdly ambiguity and redundancy, which means the team is given a direction but discussion and interpretation is acknowledged as necessary to achieve the outcome.

- Community of purpose (Warren 1996 in Liedtka 1999)

Liedtka's paper is expounding the value of building an organisation based on communities of practice with an underlying ethos of care. Drawing together a number of themes, including leadership, collaboration and learning, she argues for their development and integration into a set of meta-capabilities to deliver competitive advantage. Within this paper the author refers to the notion of a "community of purpose", a term that has been coined by Warren (1996) and described by Liedtka (1999) as similar to that of a community of practice; the term encompasses shared meanings, work practice and provides a common identity for the members.

- Knowledge activists (von Krogh, Nonaka and Ichijo 1997)

This is a paper that draws upon the author's previous work to offer an idea for the creation of knowledge within an organisation and the connecting of people throughout the organisation. To this end the authors suggest the role of a knowledge enabler, alternatively called a "knowledge activist"; such a role they argue can be fulfilled by an individual, group or department.

Knowledge activists engage participants into micro-communities of knowledge, imagined communities and shared maps of cooperation. The authors explain that the micro-communities span groups, departments and the wider organisation (making them similar to communities of practice). The micro-communities are connected through shared maps of cooperation, that is stories and information about one another, and in this way the members construct imagined communities across the organisation.

- Community of competence (Snowded 1999)

The community of competence idea is within a paper that explores the issue of managing knowledge within organisations. There is an acknowledgement of the explicit and tacit components of knowledge and therefore the need for an organisation to be able to utilise both. The author equates a community of competence with a community of practice, and other similar ideas, arguing they are central to any organisational attempts to manage knowledge. The author distinguishes a community of competence by emphasising that the community is recognised as part of the formal organisation; the membership is due to position and/ or status and the community can be organised and controlled. Within a community information, tacit knowledge and learning can be shared particularly through interaction and story-telling.

- Communities of interest (Arias and Fischer 2000)

The “community of interest” idea is located in a paper that focuses upon presenting a framework for collaborative design based on boundary objects. The distinction that is drawn by the authors between a community of practice and a community of interest is not consistent with the rest of the literature. An effective argument could be made that in fact they are one and the same. Nevertheless, the paper presents an argument that common understanding, to enable collaboration, is through the construction and use of common tools, or boundary objects, between two communities.

Appendix Four: An emerging context for change

1. Introduction

This appendix provides further detail to the organisational and practice context that initiated and shaped the technologisation of practice. An abbreviated version of this appendix has been provided in the main body of the thesis, within chapter six.

This significant change emerged from a small group of community health nurses simply wanting to 'improve their practice'. Firstly, the nursing practice context in Community Health is considered as this has been shown to impact on change activities (Kleiner and Corrigan 1989; Light 1998; Atchison 1999; Hage 1999; Wise 1999; Coghlan 2000; Brookfield 2000; Augier, Shariq and Vendelo 2001). Then the "change conversation" (Duck 1993; Ford and Ford 1995; Ford 1999; Gold and Watson 2001) the nurses engaged in is explored. Thirdly and finally, the appendix ends by detailing the "bottom-up entrepreneurship" (Sarbaugh-Thompson 1998) that the nurses engaged in to pursue their idea of enacting a specialised early childhood service. This involved the opportunistic collaboration with the Health Outcome Resource Team (HORT), an "organisational discretionary or slack resource" (Cyert and March 1963).

2. Community Health nursing, a generalist nursing team

The nursing practice context in Community Health is necessary to consider as research has shown that the organisational context influences the way that change occurs (Kleiner and Corrigan 1989; Tyre and von Hippel 1997; Light 1998; Atchison 1999; Hage 1999; Wise 1999; Coghlan 2000; Brookfield 2000; Augier, Shariq and Vendelo 2001).

Change initiatives are themselves embedded in unique historical moments and locales and occur in relation to these phenomena.
(O'Connor 2000: 175)

A small group of nurses' desire to specialise in early childhood nursing at a time when community health nursing operated as a generalist practice provided the initial impetus for change.

While considered as one organisation, the SWSAHS has five autonomous sectors resulting in differences between services in Community Health. A nurse who had been a NUM in Ingleburn and was now a project officer explained:

"...community nursing across SWSAHS isn't particularly cohesive, so each sector develops and interprets their services and what they do every differently..."

Maureen, Families First Project Officer Interview 16/10/01

Each sector while providing broadly the same community health nursing service differed in the details of those services. The geographic isolation of the community health centres from one another, reinforced by the organisational structure hindered professional collaboration across the sectors. In 1995, the community health nursing team in Macarthur was operating as a 'generalist team'. That is, all nurses participated in all forms of nursing work in community health including providing the well baby clinics and visiting people in their homes to assist with showering and other physical care duties.

In the AHS community health nursing was not valued highly and seen as somewhat of an easy option. Further still, there were limited resources in Community Health to support individuals seeking further professional education, and consequently there was little emphasis on further professional training. Essentially individual nurses relied on their own resources and motivation to seek, and undertake, further professional education. Coming to work in community health an individual nurse brought their professional training,

experience and skills from other nursing work but often without specific training in primary health practice or philosophy. By necessity to enact their practice the nurses would collaborate with their immediate colleagues to interpret and carry out their responsibilities. This conduct was both formally and informally organised, with areas of professional interest intersecting with, or leading to, friendships to provide the impetus for collaboration. That is, the local contextual setting of the community health centre was the major influence on constructing the expectations and conduct for their clinical practice. Small groups of nurses would informally discuss their work and clinical practice, and in doing so construct collective understanding and a common way of working (Daft and Weick 1984; Weick 1995; Shariq 1998). Consequently, within a centre, practice varied from one group of nurses to another, resulting in significant differences in understanding and practice across the whole nursing group (Eraut 2000). The nursing team was heterogenous not homogenous in their views and practices; such heterogenous conduct is not unique to nurses with other research reporting similar behaviour by physicians (Mano-Negrin and Mittman 2001).

The expectations of the management of the health service, as shown by the reporting mechanisms, were focused on clinic attendance numbers. The monthly statistics provided the evidence that the nursing service was operating appropriately and there were limited, if any, questions asked. This situation was due to the ad hoc development of community health nursing within the sectors and across the AHS, whereby they responded to the demands and changes of the hospital services, or as one nurse explained, “we had always done that”. Similarly, another nurse stated that the arrangements in Macarthur were by no means unique or different compared to other sectors.

The next section now explores how changes at the hospital altered the work focus of this generalist nursing team. These changes initiated a change conversation within the generalist team that had far reaching effects for nursing in Community Health.

3. A change conversation

The nursing role in Community Health was under pressure to expand their work. The nurses were faced with increased pressure to take on more referrals from the hospital. The total number of referrals being made increased, the referrals were made at an earlier stage in the healing or care process and new areas of clinical nursing work were referred.

“...also we were getting some more acute referrals, post surgical acute coming out because the hospital needed to discharge them. It was someone’s coming out with a drain, are you able to manage that?, we just wanted one or two visits and then the drain removed. Yes we can do that and we took over a lot of the stuff that was taken back to the hospital once, where they went back to emergency and sit there hours to get their dressings done. Well they started looking at, well community nursing can do that ...”

Gwen, A/NUM-CH, Interview 8/10/01

The nurses were being asked to take on different and more complex clinical nursing work. These apparently simple requests, “one or two visits to change a drain or a dressing” initiated a shift from the nurses undertaking the physical care duties to providing a clinical nursing service. This shift ultimately changed the identity (Wenger 1998a) of the nurses and nursing in Community Health.

The nursing profession has a strong oral and face-to-face culture with a reliance on the practical and routine actions established in the workplace (May 1992; Rose and Parker 1994; Riley-Doucet and Wilson 1997; Suominen, Kovasin and Ketola 1997; Benner, Hooper-Kyriakidis and Stannard 1999). Responding to the referrals the nurses required the nurses to enact small but significant changes to their current practice and routines. They began to take on the clinical nursing work being referred and in doing so engaged in a “change conversation” (Duck 1993; Ford and Ford 1995; Ford 1999; Gold and Watson 2001) about their work.

The change conversation was necessary because as the nurses' role began to expand they had to negotiate the balancing of the physical care duties with the increasingly diverse clinical nursing tasks.

Over time the discussion emerged into a significant division along generalist and efficiency, and specialisation and quality dimensions. The 'generalist-efficiency' advocates argued that the service was operating efficiently as currently structured and managed. Having nurses with generalist skills provided an effective service and a broad range of practice opportunities for all nurses, including the organisational capacity to cover workloads or clinics during holiday and sick periods for staff. Alternatively, the 'specialist-quality' advocates argued that clinical practice was becoming more and more complex following the increasing early discharge practice of the hospitals. Specialisation was necessary to ensure they provided an appropriate standard of nursing care, that is, to address practice and quality issues.

The 'specialist-quality' advocates were particularly interested in early childhood nursing, and wanted to specialise in this area rather than remaining generalist nurses. Personal motivations such as this has been shown to be important in achieving change (Clarke and Meldrum 1999). For these nurses focusing upon one area of practice was seen as the way to achieve practice improvements. As one of these nurses explained:

"...we wanted to improve the practices and services of primary health nursing."

Early Childhood Nurse, Group interview 16/11/00

The nurses were questioning what they were doing, why they were providing the services the way they were – did they make a difference to the health of the babies and families or were they busy without positive effect? Other research has identified motivation such as this that has spurred public sector employees to undertake change initiatives (Holzer and Callahan 1998; Park 1999). Similarly,

action that involves making the world a better place in some way has been shown to be highly motivational for innovation (Hage 1999; Cacioppe 2000).

Within the nursing team there existed nurses who were not interested in early childhood nursing work. Being generalist nurses they performed this work as this was expected in the role. However paradoxically, they would not support, and indeed actively argued against allowing the 'specialist-quality' advocates developing specialist nursing skills in this one area. They argued strongly for the team to remain as generalist nurses. Such conduct is not unusual as initiatives that are perceived to represent a challenge to dominating ideas and groups are blocked and undermined (Rogers 1983; Porter-O'Grady and Wilson 1995; Kitchener and Whipp 1997; Luke and Begun 1997; Boonstra and Gravenhorst 1998; Clarke and Meldrum 1999). Within the generalist nursing team some nurses wanted to reorganise the clinical responsibilities but were blocked by those that did not; such blocking conduct by nurses has been observed in other contexts (McPhail 1997). This resulted in a situation where there was a significant difference between the 'specialist-quality' advocates who were (in their terms) motivated to change and improve their practice and the 'generalist-efficiency' advocates that were content with the current operation of the nursing service, and hence saw no reason to change.

The change conversation was shaped by a lack of information deemed acceptable to the nurses.

"..you know when I started off doing a lot of this stuff it was very much about occasions of service, I mean that was the only monitoring tool you had..."

Maureen, Families First Project Officer, Interview 16/10/01

The translation of clinical work into "the occasions of service" (that is, the number of clients seen within a clinic) allowed the inscription and transportation (Latour

1986) of the nurses' work for consideration elsewhere in the organisation. However for the nurses the statistical figure, "the occasions of service", simply reduced their complex three-dimensional world into two dimensions without obvious benefit. As the ongoing discussion became focused upon the work of early childhood nursing, and the issues of quality and efficiency came to the forefront, these statistics became a point of issue. These figures varied from nurse to nurse, ranging anywhere from 10 to 20 clients per clinic. However this statistical figure stripped the contextual details the nurses deemed necessary to understand the differences in their clinical practice.

"This number provided an idea of the 'volume' through a clinic but not the issues being addressed, the complexity of issues, the skill or capacity of the nurse to engage the family and/or even whether the physical environment of the clinic put the families off or encouraged them to attend."

Maureen, Families First Project Officer, Interview 16/10/01

The nurses continually argued that the clinical context and issues explored in a clinical encounter are important and necessary to understand the differences between different clinics. They resisted reducing their clinical practice to a single number, arguing a statistic cannot relay the complexity of practice. Other research with nurses has concluded that the more complex the practice, the more important the context and the less value in simple statistics; this research notes a difficulty faced by nurses is "trying to explain exactly what it is that they do" (Cowley 1995: 277).

To address this difficulty the nurses continually reinserted the clinical issues and practice context into their discussion. They continually drew upon their experiences and capacity to "narrate" (Brown and Duguid 1991) and explain their clinical practice, or alternatively to share "war stories" (Zuboff 1988; Orr 1990, 1996; Brown and Duguid 1991, 2000; Lave and Wenger 1991; Sach 1995; Wenger 1998a). In this way, together in discussion they drew upon their "tacit

knowledge” (Polanyi 1958, 1967), their personal and collective experiences shared through their stories over the available statistics; such conduct is not unique to nurses with Schudson (1990) noting similar actions among journalists when trying to understand their working context.

The wide variation in clinic numbers across the nursing team became a point of focus for their discussions. The ‘generalist-efficiency’ advocates argued that they were efficient in their clinical work and therefore managed to see a higher number of clients. Alternatively, the ‘specialist-quality’ advocates, or the nurses with the lower statistical numbers for the clinics, argued that they saw fewer clients because they offered a more comprehensive and a higher quality service. The nurses were conducting a change conversation about a “performance gap” (Zaltman, Duncan and Holbek 1973), with the two sides offering differing interpretations for the observed conduct. The ongoing discussion did not immobilise the nurses; they continued to function with their different understandings about appropriate practice within the team. Indeed such tension has been noted as necessary to produce change (Wenger 1998a; Plsek and Wilson 2001) and this was the case here.

The following section explores how the ‘specialist-quality’ nurses then took action, engaging in “bottom-up entrepreneurship” (Sarbaugh-Thompson 1998) to address the performance gap identified. These nurses collected new information that they used to advocate with their managers for the establishment of a specialist early childhood service. Their advocacy was successful and led to collaboration with the HORT, an “organisational discretionary or slack resource” (Cyert and March 1963), to evaluate the new specialist service.

4. Bottom-up entrepreneurship

The term “bottom-up entrepreneurship” (Sarbaugh-Thompson 1998) has been used to describe the process where the actors who provide the direct services of an organisation construct an innovation.

Bottom-up entrepreneurship describes a process in which the innovation arises at the bottom and support from those working at or near the street level provides the momentum needed to propel the innovation forward. (Sarbaugh-Thompson 1998: 4)

The nurses in Community Health are “at the street level” both literally and figuratively. Travelling into the community away from the physical buildings of the organisation they provide many of their services within the homes of their clients. The ‘specialist-quality’ advocates enacted the process of bottom-up entrepreneurship in pursuing their desire to specialise in early childhood nursing. Such action by an organisation’s frontline employees has been noted as a highly effective strategy by which to affect change (Beer, Eisenstat, and Spector 1990; Nadler and Trushman 1999; Beer and Eisenstat 2000; Beer and Nohria 2000; O’Brien 2002).

The Community Health Centre at Ingleburn had a reputation, as explained by one nurse, “for doing things differently”. Reflecting this reputation the ‘specialist-quality’ advocates, including the NUM, collaborated to take a risk (Judge, Fryxell and Dooley 1997; Hage 1999; McFadzean 1999). That is, to achieve a change they actively created an opportunity to pursue their questioning (Harvey and Kitson 1996) engaging as partners in change (Diamond 1998; Worren, Rundle and Moore 1999). Their actions are consistent with the findings from other research that has shown that clinicians who understand their current practice in depth want to change to improve their work (Richardson 1995). Other research has shown that the possibility for success increases when people collaborate in activities that are meaningful and important to them (Marks and Shaw 1995) and

the choice to collaborate is freely undertaken, rather than imposed upon them (Harvey and Kitson 1996). The support and involvement of the NUM was critical; she provided the encouragement and leadership for the nurses to continue the questioning of their practice (McPhail 1997; Bolton 2003; Dev Amar 2001; Jones and Creek 2003). This leadership role has been noted as an important influence on change activities (Braskamp and Maehr 1982; Senge 1990; Marks and Shaw 1995; Davenport and Prusak 1997; Dobuzinskis 1997; Ingraham, Thompson and Sanders 1998; McGill and Slocum 1998; Connelly et al. 1999; Montuori 2000).

The performance gap discussions lead the nurses to consider who was attending the early childhood service and the health outcomes for these families. A report from the AHS states:

The development of this database grew out of the recognition in 1995 - 96 by six Primary Care Nurses at the Ingleburn and Campbelltown Early Childhood Centres that they needed more and better information to be able to identify issues of access and health outcomes relating to their services and to evaluate those services. An examination of the limited data they did have showed that to be more effective they needed to target their services much better so as to reach the most disadvantaged mothers and babies in their area. (SWSAHS Maternal and Infant Network (MINET) Report, 1999-2000: 8)

Focusing on the early childhood service the nurses conducted a community survey and community information stalls at the local shopping centre. The nurses sought to understand the different reasons parents were not accessing the early childhood service. The survey revealed that mothers, and particularly those identified most 'at risk', reported that they did not access the service due to the location of the clinics in the local schools. This was in stark contrast to the nurses' beliefs that locating the clinics in the schools would enable easier access, particularly for the 'at risk' families. After consideration and discussion of the survey results, the NUM and nurses initiated the idea of locating the service in a

'shop-front' at the local shopping centre, instead of the service remaining located in the schools. An organisational report explaining this idea states:

This is a busy shopping centre used by the residents of 3 socio-economically disadvantaged suburbs. This location made Early Childhood Health Services more accessible for the disadvantaged and potentially more at-risk mothers, babies and children who used that shopping centre. (SWSAHS Maternal and Infant Network (MINET) Report, 1999-2000: 8)

At the time the management of Community Health in the Macarthur sector was exerting pressure for the nurses to provide services more effectively. The nurses considered that a 'more effective service' was being promoted to justify the economic rationalisation of services. Such justification has been identified in other research into change in health services (Rousseau and Tijoriwala 1999). The majority of early childhood clinics were being operated as single nurse practitioner clinics and were by necessity highly resource intensive. As has come to be the case in all health services, money was a shaping force. This presented an opportunity for the 'specialist-quality' advocates' as they were able to align their interests with those of the Macarthur sector management. The nurses aligned their professional goal, to specialise in early childhood, with the goal of the sector management, to reduce costs (Kitchener and Whipp 1997; Clarke and Meldrum 1999). In doing so the nurses 'shop-front' idea became formulated into the proposal for 'Kidz clinic in Minto Mall'.

While the Macarthur sector management was considering this proposal there was a change of the NUM in Community Health. Not surprisingly the nursing team continued to be divided in their attitudes to the idea of some nurses specialising in early childhood nursing. Fortunately for the nurses interested in early childhood nursing and the shop-front proposal, the new NUM shared their interest. She supported their desire to do things differently to current practice and endorsed the direction being pursued. Again the positive response from the new

NUM was important, as the maintenance of a supportive context has been noted as important for innovation and change (Senge 1990; Judge, Fryxell and Dooley 1997; Axelrod 2000).

Negotiating with both the Macarthur sector management and the Minto Mall Centre Management, the nurses were able to bring the Kidz clinic idea into being. The Minto Mall Centre management refurbished the shop for the clinic, and the Macarthur sector management provided money for the shop (clinic) rent, \$16000, on a one-off basis for one year. In endorsing the clinic the Macarthur sector management attached two conditions for the funding. Firstly, that the nursing staff would obtain ongoing funding from the local community to support the service, the Health Service would only fund the clinic for the initial year. Then secondly, that the nurses would have the Kidz clinic evaluated to demonstrate the effectiveness of the service.

On this basis the 'Kidz clinic in Minto Mall' was established. The nursing staff involved only four, with one full-time and the other three all part-time and continuing with their other generalist responsibilities. Having been given control over the clinic the nurses recalled experiencing an increased sense of responsibility and accountability (West and Wallace 1991; McPhail 1997; Ingraham, Thompson and Sanders 1998; Maudsley and Strivens 2000; O'Brien 2002) They felt personally responsible for the success, or failure, of the clinic. Particularly as the year went on and they were unable to locate ongoing funding, their anxiety and feelings of uncertainty increased. The nurses had written to local businesses, that is Kmart, Woolworths, Rotary and so on, but no major sponsor could be located. The businesses offered to donate small items for the service, or for the mothers and babies, but obtaining ongoing funding from the local business community to financially support the clinic proved to be an obstacle they could not overcome.

The availability of organisational resources labelled “discretionary or slack resources” (Cyert and March 1963) has been noted as important to achieve change and innovation (Senge et al. 1994; Judge, Fryxell and Dooley 1997). Similarly resources devoted to research and increasing the diversity of knowledge have positively contributed to organisational innovation (Hage 1999). Within the Macarthur sector there was a unit called the Health Outcomes Resource Team (HORT) that was working with clinicians to improve the health outcomes for the local community. At the time, the HORT based in a building known as the Old Bradley Centre was collaborating with clinicians who were focused on children with asthma. They were educating parents about the condition of asthma and aiming to improve health professionals’ responses to these children. The community health nurses knew the HORT because they partly shared the same client group in the same geographical area. Unfortunately for the HORT there was a fire that destroyed the Old Bradley Centre along with their equipment and all records of their work. Understandably the HORT were devastated to have lost their work and were struggling to consider beginning all over again. Fortunately for the HORT they had a flexibility in the focus of their work.

The overall brief of HORT was to assist clinicians in collecting structured, standardised information which could inform a health outcomes approach to service delivery. (Phung et al. 2001: 107)

The HORT were not required to pursue the asthma work they had previously been undertaking, they had the flexibility to work on projects of their choice so long as they were associated with improving health outcomes. The HORT is a “discretionary or slack organisational resource” (Cyert and March 1963) able to adjust to meet the requirements of the changing situation. The Kidz clinic nurses were searching for assistance to evaluate their new service, and the HORT were seeking a new direction following their crisis. Each other’s problem became the other’s solution, and collaboration on the evaluation of the Kidz clinic service resulted. The evaluation project provided the HORT staff with a new direction

and work purpose at a time when they were searching for one. The collaboration provided the nurses with access to evaluation skills and administration resources they did not have. There was the mutual recognition of the work purpose, skills and experience that each brought to the endeavour that required the other to be successful (Spence et al. 2002); previously such action has been described as “intra-organisational cooperation” (Smith, Carroll and Ashford 1995).

This concludes this appendix that has discussed the organisational and practice context that initiated the collaboration between the nurses and the HORT, that went on to result in the collaboration of the IBIS. This exploration has noted how the opportunity for change has occurred through the confluence and accumulation of many separate actions.

Appendix Five: The forms used in early childhood nursing

The following six forms are examples of the forms used in early childhood nursing.

The first four are from the SWSAHS Health Record –

- IBIS
- Postnatal Edinburgh Depression Scale
- Family History Database form
- Home Visit Environmental Checklist

The remaining two are from the Personal Health Record or ‘baby’s blue book’ –

- Child Health Check – completed by the nurse
- Child Health Check – completed by the parent

Appendix Five: The forms used in early childhood nursing

The Postnatal Edinburgh Depression Scale, PEDS page 2, completed by the nurse when providing the early childhood nursing service.

5 I have felt scared or panicky for no very good reason:

Yes, quite a lot
Yes, sometimes
No, not much
No, not at all

6 Things have been getting on top of me:

Yes, most of the time I haven't been able to cope at all
Yes, sometimes I haven't been coping as well as usual
No, most of the time I have coped-quite well
No, I have been coping as well as ever

7 I have been so unhappy that I have had difficulty sleeping:

Yes, most of the time
Yes, sometimes
Not very often
No, not at all

8 I have felt sad or miserable:

Yes, most of the time
Yes, quite often
Not very often
No, not at all

9 I have been so unhappy that I have been crying:

Yes, most of the time
Yes, quite often
Only occasionally
No, never

10 The thought of harming myself has occurred to me:

Yes, quite often
Sometimes
Hardly ever
Never

Thank you.

Appendix Five: The forms used in early childhood nursing

The Family History Data Base Form, completed by the nurse for entry into a database maintained by the CFHNT.

SOUTH WESTERN SYDENY AREA HEALTH SERVICE DRAFT – C&FHNP FAMILY HISTORY DATA BASE Nov 01	
Child's Name _____	Medical Record Number _____
DOB child _____	SEX of Child _____
Mothers Name _____	Fathers Name: _____
DOB: _____	DOB: _____
Siblings Name : _____	DOB: _____
_____	DOB : _____
_____	DOB: _____
Immediate Family Medical History	
<input type="checkbox"/> None <input type="checkbox"/> Asthma <input type="checkbox"/> Diabetes <input type="checkbox"/> Renal disease <input type="checkbox"/> Hypertension <input type="checkbox"/> Cardiac Disease <input type="checkbox"/> Disability <input type="checkbox"/> Speech problems <input type="checkbox"/> Learning difficulties	
Please give details on any medical concerns ticked. (Name of family member & relationship to child, current medications and treatments etc)	

Mental Health History: _____	

Allergies _____	
Maternal Health History:	
Pregnancy: _____	
Delivery: _____	
Post Natal:	
Breasts/Nipples: _____	Lochia: _____
Perineum/wound: _____	Urine/bowels: _____
Nutrition: _____	Rest/exercise: _____
Contraception _____	Post natal check: _____
Current Medication: _____	
Additional Comments: _____	

Signature of nurse: _____	Date data base completed: _____

Appendix Five: The forms used in early childhood nursing

The Child Health Check 1-4 Weeks, completed by the nurse in the clinic, taken from the Personal Health Record or 'baby's blue book'.

Child health check

*Assessment by child and family health nurse, GP, or paediatrician.
Items under health assessment are to be completed if not already checked by hospital.*

Sex _____ Date of birth _____ Postcode _____

Health assessment Normal Review Refer

Length%			
Weight%			
Head circumference%			
Fontanelles			
Eyes (cataracts)			
Cardiovascular (Doctor only)			
Umbilicus			
Femoral pulses			
Hip test for dislocation			
Testes fully descended R/L			
Genitalia			
Anal region			
Skin			
Reflexes			

Comments _____

Action taken _____

Name of doctor or nurse _____ Signature _____

Venue _____ Date of check _____

1-4 weeks

Health risk factors	Yes	No
Parent questions p50	<input type="checkbox"/>	<input type="checkbox"/>
Age appropriate immunisation completed as per schedule (Hep B only)	<input type="checkbox"/>	<input type="checkbox"/>
Are there any hearing risk factors p44	<input type="checkbox"/>	<input type="checkbox"/>
Are there any vision risk factors p45	<input type="checkbox"/>	<input type="checkbox"/>
Appropriate health information discussed	<input type="checkbox"/>	<input type="checkbox"/>

Original: Child Health Collection 1 - 4 weeks
 Duplicate: ECHN
 Triplicate: PHR

Appendix Five: The forms used in early childhood nursing

The Child Health Check completed by the parent(s) at 6-8 weeks before they see the nurse in the clinic, taken from the Personal Health Record or 'baby's blue book'.

Before your child's 6 to 8 weeks health check

Answer these questions before you visit your nurse or doctor.

Have you had your postnatal check?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unsure <input type="checkbox"/>
Was your baby checked also?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unsure <input type="checkbox"/>
Do you have any concerns about your baby?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unsure <input type="checkbox"/>
Does your baby turn towards light?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unsure <input type="checkbox"/>
Does your baby smile at you?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unsure <input type="checkbox"/>
Do you think your baby can hear you?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unsure <input type="checkbox"/>
Is your baby startled by loud sounds like a vacuum cleaner?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unsure <input type="checkbox"/>
Does your baby have a constant cold and/or green runny nose?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unsure <input type="checkbox"/>
Do you and your baby enjoy being together?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unsure <input type="checkbox"/>
How are you feeding your baby?	Breast <input type="checkbox"/>		Bottle <input type="checkbox"/>

You may wish to talk to your nurse or doctor about how you are feeling emotionally and physically, and you may have questions about how best to care for your baby.

Parent notes _____

55

Appendix Six: The appropriation of the AHS resources

This appendix is an extended examination of the basic appropriation of resources that realises the accountability relationship.

There is a basic appropriation of AHS resources to enable the nurses to conduct their work or enact their practice, whether that is as members of the generalist team or CFHNT collaborative community respectively. Together the boundary defining and legitimation resources of the AHS and physical space of the community health centre regulate and shape the conduct of the nurses, and in doing so defines them as community health nurses. They are “lines of force” (Rose 1999) that construct the parameters and space of the AHS and more specifically that of Community Health. Each of these is now briefly discussed.

1. The SWSAHS as a boundary defining resource

The SWSAHS has a defined boundary that separates the AHS from others within the state of NSW. As represented diagrammatically in appendix two, there are also internal boundaries that construct the five sectors of the AHS. Within this physical space the legal entity, the SWSAHS, is a major provider of health services and in particular early childhood services.

It is a matter of marking out a territory in thought and inscribing it in the real, topographizing it, investing it with powers, bounding it by exclusions, defining who or what can rightfully enter. (Rose 1999: 34)

Within this geographical region the SWSAHS defines and legitimises who may act as an SWSAHS early childhood nurse. These boundaries are “lines of force” that mark out the parameters and space of the AHS. Conversely the nurses’

have to appropriate these boundaries, or “lines of force”, to be able to enact their practice. The boundaries determine where the CFHNT community travel, and conversely do not travel, in providing their services. The boundaries are disciplining in that they restrict where the nurses may go but they free the nurses from having to go everywhere. These boundaries shape the conduct of the nurses. Enacting competent practice is demonstrating awareness and use of these boundaries.

2. The SWSAHS staff identification tags

The SWSAHS uses identification tags, worn by all staff, to legitimise those who provide the health services. The identification tag symbolises, making visible and mobile, the organisation and boundaries of the AHS; to frame this in Rose’s words:

It is impossible to participate in almost any contemporary practice without being prepared to demonstrate identity in ways that link individuation and control. (Rose 1999: 240)

The CFHNT are all required to, and indeed willing to, wear an identification tag when at work. The tag, which is provided by the AHS and given to a nurse when she first commences, displays their name, photograph, professional discipline and the sector they belong to; for example Mary Smith, Early Childhood Nurse, Liverpool Health Service. The tag simultaneously individualises and locates the professional population within a specific sector to which the individual belongs. The nurses have accepted the necessity of such identification, or governing, devices and they have adjusted their conduct to appropriate the use of the resource. The identification tag is a symbol that simultaneously legitimises the practice of the nurses and is a constant reminder that disciplines them to follow, and enact, the boundaries, regulations and policies of the AHS. The identification

tag is a “line of force” that shapes the conduct of the nurses and promotes accountability of the nurses to the AHS.

The identification tag can be worn clipped onto their clothing or, as is the practice for the majority of the nurses, hung around the neck on a cord. Initially the nurses are conscious of the identification tag, but quickly the tag becomes part of the person of the nurse, in the same way as a watch or jewellery does. They undertake the tasks of their day unself-consciously removing and replacing the tag around their neck as necessary. Many nurses individualise their tag, using the cord to hang their pen(s) upon and/or attach badges to. The identification tag becomes a taken-for-granted resource that is part of the nurses’ equipment, but one that reinforces identification with the role, responsibilities and accountability mechanisms of the AHS. In the words of a nurse:

“I don’t get questioned a lot about my id although I try and explain and have it out so that they can see that I am a health professional.”

Judy, CNS-EC, Interview 19/11/01

To put this into my terms, the boundaries and identification tag realises the local-global and individual-community practice dualities. The nurses’ local enactment of their practice is linked to more global entities, the AHS and their profession, and in doing so they are identified as an individual who simultaneously belongs to a larger organisational and professional community.

3. The physical space of the community health centre

The physical office building constructs space that is appropriated by the nurses to enact their practice.

Hence control must be designed in, embedded in the very structuring of time, space and the environment. (Rose 1999: 251)

The spatial division of the community health building is a “line of force” that shapes the conduct of both the staff and clients by establishing zones of exclusion and inclusion (Shumway 1989; Rose and Miller 1992; Rose 1999; Tellioglu and Wagner 2001; Riley and Manias 2002). These zones are identified as the private and public spaces respectively and such a spatial division has been called “the securitisation of habitat” (Rose 1999). The public space is divided into functional compartments, a waiting area and toilets, where the clients have limited access, shaped by reason and time (Shumway 1989). Whereas the private space, collectively called the ‘office space’, is reserved exclusively for the staff only. The one area of overlap is the ‘clinic rooms’ where the staff and clients meet to enact their mutually defining roles. To enact their practice the nurses must negotiate and appropriate these spaces daily and in doing so they are implicated immediately into a system of power relations (Shumway 1989; Rose and Miller 1992; Manias and Street 2000; Tellioglu and Wagner 2001; Riley and Manias 2002).

Geographical space also plays an important role in influencing power relations by physically partitioning certain groups of individuals from others, or by gathering individuals with a common purpose in the one place. (Manias and Street 2000: 70)

The nurses’ capacity to appropriate this space is the enactment, and a demonstration of, their power. Appropriating this space begins with the nurses having to negotiate the security system, entering a numerical key, to allow access to the office space of the building. This staff only space includes a number of offices including an early childhood office, a general staff (tea) room, a small meeting room, a large meeting room and an administration/ reception area. In each of these spaces the nurses act similarly and differently; they talk and interact in each space but each room has been allocated a particular purpose that disciplines, or foregrounds, different priorities and conduct over others. For example when conducting a formal team meeting they meet in the small group

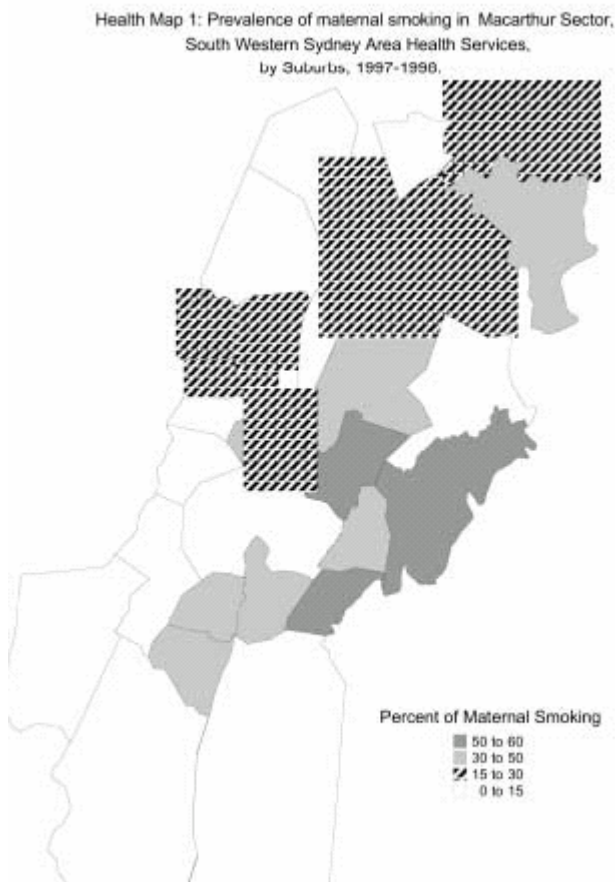
room, not the staff room; when completing the write up of their clinical notes they sit in the early childhood team room not the administration area. Competent early childhood nursing practice is knowing how the different rooms are appropriated to make distinctions within their work.

The nurses' understanding and knowledge to appropriate the space comes from the two sources. Firstly the "tacit knowledge" (Polanyi 1958, 1967) the nurses bring to their work enables them to recognise the appropriate actions of others within the different spaces and act similarly (Barnes 2000) and/or recognise the resources within the space and deduce what appropriate actions should be. Secondly, through engaging in practice with their colleagues the nurses learn to act appropriately within the different rooms; through "legitimate peripheral participation" (Lave and Wenger 1991) they learn how identify and enact the purpose(s) of each room. In this way the nurses appropriate the spaces as they survey and regulate their own, and their colleagues, conduct (Hindess 1996 in Barnes 2000). The space, or alternatively the "lines of force", shapes the conduct of the nurses and in doing so the nurses become competent members of both the CFHNT community and the larger organisational unit of community health.

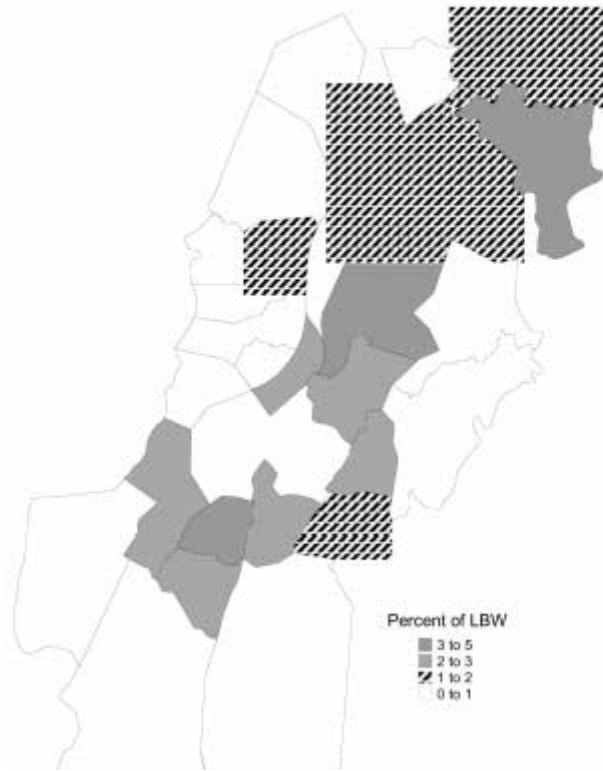
This concludes this appendix that has discussed the basic appropriation of resources that realises the accountability relationship. Three points have been explored, that is, the nurses' appropriation of the boundaries of the AHS, the identification tag and space of the community health building.

Appendix Seven: Health maps

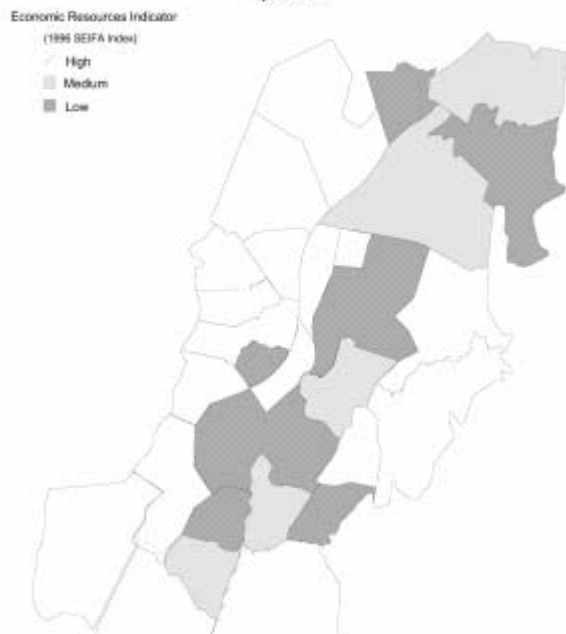
The 'Health Maps' are from Phung et al. (2001) A framework for monitoring maternal and infant health status. Australian Health Review, **24** (1), 105-115.



Health Map 2: Incidence of Low Birth Weight (LBW) in Macarthur Sector,
South Western Sydney Area Health Services,
by Suburbs, 1997-1998.



Health Map 3: Socioeconomic Status in Macarthur Sector,
South Western Sydney Area Health Services,
by Suburbs.



References

- Aamodt, A. (1991) Ethnography and epistemology: Generating nursing knowledge. In Qualitative Nursing Research: A Contemporary Dialogue. (ed J. Morse), pp. 27-40. London: Sage.
- Aarts, J. & Peel, V. (1999) Using a descriptive model of change when implying large scale clinical information systems to identify priorities for further research. International Journal of Medical Informatics, **56**, 43-50.
- Adams, E. & Freedman, C. (2000) Communities of practice: Bridging technology and knowledge assessment. Journal of Knowledge Management, **4** (1), 38-44.
- Adler, P. & Adler, P. (1994) Observational techniques. In Handbook of Qualitative Research (eds N. Denzin & Y. Lincoln), pp. 377-392. Thousand Oaks, CA: Sage.
- Agar, M. (1980) The Professional Stranger: An Informal Introduction to Ethnography. Sydney: Academic Press.
- Ahern, J. (1999) Pearls, pith and provocation: Ten tips for reflective bracketing. Qualitative Health Research, **9** (3), 407-411.
- Altheide, D. & Johnson, J. (1998) Criteria for assessing interpretive validity in qualitative research. In Collecting and Interpreting Qualitative Materials. (eds N. Denzin & Y. Lincoln), pp. 283-312. Thousand Oaks: Sage.
- Alvesson, M. (2001) Knowledge work: Ambiguity, image and identity. Human Relations, **54** (7), 863-886.
- Alvesson, M. & Karreman, D. (2000) Taking the linguistic turn in organisational research: Challenges, responses, consequences. The Journal of Applied Behavioral Science, **36** (2), 136-158.
- Alvesson, M. & Skoldberg, K. (2000) Reflexive Methodology: New Vistas for Qualitative Research. Thousand Oaks: Sage.
- Ambrosini, V. & Bowman, C. (2001) Tacit knowledge: Some suggestions for operationalisation. Journal of Management Studies, **38** (6), 811-829.
- Amit, V. (2000) Introduction: Constructing the field. In Constructing the Field: Ethnographic Fieldwork in the Contemporary World. (ed V. Amit), pp. 1-18. London: Routledge.
- Ammenwerth, Kutscha, Kutscha, Mahler, Eichstadter & Haux (2001b) Nursing process documentation systems in clinical routine: Prerequisites and experiences. International Journal of Medical Informatics, **64** (2-3), 187-200.

- Ammenwerth, E., Eichstadter, R., Haux, R., Pohl, U., Sebel, R. & Zeigler, S. (2001a) A randomised evaluation of a computer-based nursing documentation system. Methods of Information in Medicine, **40**, 61-68.
- Anderson, R. & McDaniel, R. (2000) Managing health care organisations: Where professionalism meets complexity science. Health Care Management Review, **25** (1), 83-92.
- Anderson, R. & Sharrock, W. (1993) Can organisations afford knowledge. Computer Supported Cooperative Work, **1** (3), 143-61.
- Araujo, L. (1998) Knowing and learning as networking. Management Learning, **29** (3), 317-336.
- Arendt, H. (1970) On Violence. New York: Harcourt Brace and Company.
- Argyris, C. & Schon, D. (1978) Organisational Learning: A Theory of Action Perspective. Reading, MA: Addison-Wesley.
- Arias, E. & Fischer, G. (2000) Boundary objects: Their role in articulating the task at hand and making information relevant to it. Intelligent Systems and Applications, 1-8.
- Armson, R., Ison, R., Short, L., Ramage, M. & Reynolds, M. (2001) Rapid institutional appraisal. Systemic Practice and Action Research, **14** (6), 763-777.
- Armstrong, D. (1983) The Political Anatomy of the Body, Medical Knowledge in Britain in the Twentieth Century. London: Cambridge University Press.
- Ashkenas, R., Ulrich, D., Jick, T. & Kerr, S. (1995) The Boundaryless Organisation: Breaking the Chains of Organisational Structure. San Francisco: Jossey-Bass Publishers.
- Atchison, T. (1999) Managing change. Frontiers of Health Services Management, **16** (1), 3-29.
- Atkinson, P. (1997) Understanding Ethnographic Texts. London: Sage.
- Atkinson, P. & Hammersley, M. (1994) Ethnography and participation observation. In Handbook of Qualitative Research. (eds N. Denzin & Y. Lincoln), pp. 248-261. Thousand Oaks, CA: Sage.
- Augier, M., Shariq, S. & Vendelu, M. (2001) Understanding context: It's emergence, transformation and role in tacit knowledge sharing. Journal of Knowledge Management, **5** (2), 125-136.

- Augier, M. & Vendelo, M. (1999) Networks, cognition and management of knowledge. Journal of Knowledge Management, **3** (4), 252-261.
- Aungles, S. & Parker, S. (1992) Work, Organisations and Change. (2nd edn). Sydney: Allen & Unwin.
- Axelrod, R. (2000) Terms of Engagement: Changing the Way We Change Organisations. San Francisco: Berrett-Koehler Publishers Inc.
- Backman, K. & Kyngas, H. (1999) Challenges of the grounded theory approach to a novice researcher. Nursing and Health Sciences, **1**, 147-153.
- Badaracco, J. (1991) The Knowledge Link: How Firms Compete Through Strategic Alignments. Boston, Mass: Harvard Business School Press.
- Baillie, L. (1995) Ethnography and nursing research: A critical appraisal. Nurse Researcher, **3** (2), 5-21.
- Baker, M., Barker, M., Thorne, J. & Dutnell, M. (1997) Leveraging human capital. Journal of Knowledge Management, **1** (1), 63-74.
- Barab, S. & Hay, K. (2001) Doing science at the elbows of experts. Journal of Research in Science Teaching, **38** (1), 70-102.
- Barker, J. (1993) Tightening the iron cage: Concertive control in self-managing teams. Administrative Science Quarterly, **38**, 408-437.
- Barley, S. (1996) Technicians in the workplace: Ethnographic evidence for bringing work into organisational studies. Administrative Science Quarterly, **41** (3), 404-441.
- Barnes, L. (2000) The social production of an enterprise clinic: Nurses, clinical pathway guidelines and contemporary healthcare practices. Nursing Inquiry, **7**, 200-208.
- Bartunek, J. (1984) Changing interpretive schemes and organisational restructuring: The example of a religious order. Administrative Science Quarterly, **29**, 355-372.
- Baum, F. (1995) Researching public health: Behind the qualitative-quantitative methodological debate. Soc. Sci. Med., **40** (4), 459-468.
- Becher, T. (1999) Professional Practices: Commitment and Capability in a Changing Environment. New Brunswick, NJ: Transaction Publishers.

Bechky, B. (2003) Sharing meaning across occupational communities: The transformation of understanding on a production floor. Organisation Science, **14** (3), 312-330.

Becker, H., Blanche, G., Hughes, E. & Strauss, A. (1961) Boys in White: Student Culture in Medical School. Chicago: University of Chicago Press.

Beech, N. (2000) Narrative styles of manager and workers: A tale of star-crossed lovers. The Journal of Applied Behavioural Science, **36** (2), 210-228.

Beer, M. & Eisenstat, R. (2000) The silent killers of strategy implementation and learning. Sloan Management Review (Summer 2000), 29-40.

Beer, M., Eisenstat, R. & Spector, B. (1990) Why change programs don't produce change. Harvard Business Review, 158-163.

Beer, M. & Nohria, N. (2000) Cracking the code of change. Harvard Business Review (May-June), 133-141.

Beeson, I. & Davis, C. (2000) Emergence and accomplishment in organisational change. Journal of Organisational Change Management, **13** (2), 178-189.

Behar, R. (1996) The Vulnerable Observer: Anthropology That Breaks Your Heart. Boston: Beacon Press.

Belanszky, M. (1999) IBIS. Sydney: SWSAHS.

Benner, P., Hooper-Kyriakidis, P. & Stannard, D. (1999) Clinical Wisdom and Interventions in Critical Care. London: W.B. Saunders Company.

Bennett, J. (2001) The relationship between team and organisational learning. International Journal of Health Care Quality Assurance, **14** (1), 14-20.

Berg, M. (1999) Patient care information systems and healthcare work: A sociotechnical approach. International Journal of Medical Information, **55**, 87-101.

Berg, M. (2001) Implementing information systems in health care organisations: Myths and challenges. International Journal of Medical Informatics, **64**, 143-156.

Berg, M., Langenberg, C., Berg, I. & Kwakkernaat, J. (1998) Considerations for sociotechnical design: Experiences with an electronic patient record in a clinical context. International Journal of Medical Informatics, **52**, 243-251.

Berkwits, M. & Inui, T. (1998) Making use of qualitative research techniques. Journal of General Internal Medicine, **13** (3), 195-199.

- Berragan, L. (1998) Nursing practice draws upon several different ways of knowing. Journal of Clinical Nursing, **7**, 209-217.
- Berstein, G. (1999) Human Services? That Must Be So Rewarding. Philadelphia: MacLennan & Petty.
- Bhabha, H. (1990) The third space: An interview with Homi Bhabha. In Identity: Community, Culture and Difference. (ed J. Rutherford), pp. 207-221. London: Lawrence & Wishart.
- Billett, S. (1996) Situated learning: Bridging sociocultural and cognitive theorising. Learning Instruction, **6** (3), 263-280.
- Björnsdóttir, K. (2002) From the state to the family: Reconfiguring the responsibility for long-term nursing care at home. Nursing Inquiry, **9** (1), 3-11.
- Blackler, F. (1995) Knowledge, knowledge work and organisations: An overview and interpretation. Organisation Studies, **16** (6), 1021-1046.
- Bloodgood, J. & Salisbury, D. (2001) Understanding the influence of organisational change strategies on information technology and knowledge management strategies. Decision Support Systems, **31**, 55-69.
- Bloomfield, J. (1999) The Changing Image of Australian Nursing: <http://www.ciap.health.nsw.gov.au/hospolic/stvincents/stvin99/Jacqui.htm>.
- Bloor, G. & Dawson, P. (1994) Understanding professional culture in organisational context. Organisation Studies, **15** (2), 275-295.
- Bloor, M. (2001) The ethnography of health and medicine. In Handbook of Ethnography (eds P. Atkinson, A. Coffey, S. Delmont, *et al.*), pp. 177-190. London: Sage.
- Bloor, M. & McIntosh, J. (1990) Surveillance and concealment: A comparison of techniques of client resistance in therapeutic communities and Health Visiting. In Readings in Medical Sociology. (eds S. Cunningham-Burley & N. McKegany), pp. 38-44. London: Tavistock.
- Boesch, E. (1992) Culture - individual - culture: The cycle of knowledge. In Social Representations and the Social Bases of Knowledge. (eds M. von Cranach, W. Doise & G. Mugny), pp. 112-128. Lewiston, NY: Hogrefe & Huber Publications.
- Bogdan, R. & Taylor, S. (1984) Introduction to Qualitative Research. (2nd edn). New York: Wiley Press.

Boiral, O. (2002) Tacit knowledge and environmental management. Long Range Planning, **35**, 291-317.

Boland, R. & Tenkasi, R. (1995) Perspective making and perspective taking in communities of knowing. Organisation Science, **6** (4), 350-372.

Bolton, S. (2003) Multiple roles? Nurses as managers in the NHS. The International Journal of Public Sector Management, **16** (2), 122-130.

Boonstra, J. & Gravenhorst, K. (1998) Power dynamics and organisational change: A comparison of perspectives. European Journal of Work and Organisational Psychology, **7** (2), 97-120.

Boreham, N. (2000) Collective professional knowledge. Medical Education, **34**, 505-506.

Boud, D., Keogh, R. & Walker, D. (1985) Reflection: Turning Experience into Learning. London: Kogan Page.

Boujut, J.-F. & Blanco, E. (2003) Intermediary objects as a means to foster co-operation in engineering design. Computer Supported Cooperative Work, **12**, 205-219.

Bourdieu, P. (1998) Practical Reason. Cambridge: Blackwell.

Boyle, J. (1994) Styles of ethnography. In Critical Issues in Qualitative Research Methods. (ed J. Morse), pp. 159-185. London: Sage.

Braa, K. & Vidgen, V. (1999) Interpretation, intervention, and reduction in the organisational laboratory: A framework for in-context information system research. Accounting, Management and Information Technologies, **9**, 25-47.

Bradley, J. (1993) Methodological issues and practices in qualitative research. The Library Quarterly, **63** (4), 431-449.

Braskamp, L. & Maehr, M. (1982) The Motivation Factor: A Theory of Personal Investment. Lexington, MA: Heath.

Bridges, W. (1991) Managing Transitions: Making the Most of Change. Reading: Addison-Wesley.

Brookfield, D. (2000) Management styles in the public sector. Management Decision, **38** (1), 13-18.

- Brookfield, S. (1993) Through the lens of learning: How the visceral experience of learning reframes teaching. In Using Experience for Learning. (eds D. Boud, R. Cohen & D. Walker), pp. 21-33. Bristol: Open University Press.
- Brooks, I. (1996) Using ritual to reduce barriers between sub-cultures. Journal of Management in Medicine, **10** (3), 23-30.
- Brown, G. (1984) Accounts, meaning and causality. In Accounts and Action (eds G. Gibert & P. Abell), pp. 23-36. Gower: Aldershot.
- Brown, J. (1998) Internet technology in support of the concept of "communities-of-practice": The case of Xerox. Accounting, Management and Information Technologies, **8** (4), 227-236.
- Brown, J. & Duguid, P. (1991) Organisational learning and communities-of-practice: Toward a unified view of working, learning and innovation. Organisational Science, **2** (1), 40-57.
- Brown, J. & Duguid, P. (1998) Organising knowledge. California Management Review, **40** (3), 90-111.
- Brown, J. & Duguid, P. (2000) The Social Life of Information. Massachusetts: Harvard Business School Press.
- Brown, J. & Duguid, P. (2001) Knowledge and organisation: A social-practice perspective. Organisation Science, **12** (2), 198-213.
- Brown, J. & Gray, E. (1995) The people are the company. Fast Company (1), 78-82.
- Brown, K., Waterhouse, J. & Flynn, C. (2003) Change management practices: Is a hybrid model a better alternative for public sector agencies? The International Journal of Public Sector Management, **16** (3), 230-241.
- Bruner, J. (1963) The Process of Education. New York: Vintage Books.
- Bryman, M. (1998) Language Learning in Intercultural Perspective: Approaches Through Drama and Ethnography. Cambridge: Cambridge University Press.
- Brynjolfsson, E., Renshaw, A. & Van Alstyne, M. (1997) The matrix of change. Sloan Management Review, **38** (2), 37-54.
- Buchanan, D., Boddy, D. & McCalman, J. (1988) Getting in, getting on, getting out and getting back. In Doing Research in Organisations. (ed A. Bryman), pp. 43-55. London: Routledge.

Burchell, G. (1991) Peculiar interests: Civil society and governing 'the system of natural liberty'. In The Foucault Effect: Studies in Governmentality. (eds G. Burchell, C. Gordon & P. Miller), pp. 119-150. Hemel Hamstead: Harvester Wheatsheaf.

Burnes, R. (1996) No such thing as ... a "one best way" to manage organisational change. Management Decision, **34** (10), 11-18.

Burnham, D. (1983) The Rise of the Computer State. New York: Random House.

Burrell, G. (1988) Modernism, postmodernism and organisational analysis 2: The contribution of Michel Foucault. Organisation Studies, **9** (2), 221-235.

Burrell, G. (1994) Modernism, postmodernism and organisational analysis 4: The contribution of Jurgen Habermas. Organisation Studies, **15** (1), 1-18.

Buscher, M., Gill, S., Mogensen, P. & Shapiro, D. (2001) Landscapes of practice: Bricolage as a method for situated design. Computer Supported Cooperative Work, **10**, 1-28.

Button, G. & Harper, R. (1993) Taking the organisation into accounts. In Technology in Working Order. Studies of Work, Interaction and Technology. (ed G. Button), pp. 98-107. London: Routledge.

Cacioppe, R. (2000) Creating spirit at work: Re-visioning organisation development and leadership. The Leadership and Organisation Development Journal, **21** (1), 48-54.

CAFHNA (2001) The Scope and Practice for Child and Family Health Nurses. Sydney: Child and Family Health Nurses Association (NSW) Inc.

Callon, M. (1986) Some elements of a sociology of translation: Domestication of the scallops and fisherman of St Brienne Bay. In Power, Action and Belief: A New Sociology of Knowledge? (ed J. Law), pp. 196-229. Menthuen: Keele.

Carignani, V. (2000) Management of change in health care organisations and human resource role. European Journal of Radiology, **33**, 8-13.

Carr, S. (2001) Nursing in the community - the impact of context on the practice agenda. Journal of Clinical Nursing, **10**, 330-336.

Casebeer, A. & Hannah, K. (1998) The process of change related to health policy shift: Reforming a health care system. International Journal of Public Sector Management, **11** (7), 566-582.

Cheek, J. (1997) (Con)textualising toxic shock syndrome: Selected media representations of an emerging health phenomenon. Health, **1** (2), 183-203.

Cheek, J. (2000) Postmodern and Poststructural Approaches to Nursing Research. Thousand Oaks, CA: Sage.

Cheek, J. & Rudge, T. (1994) The panopticon revisited? An explanation of the social and political dimensions of contemporary health care and nursing practice. International Journal of Nursing Studies, **31** (6), 583-591.

Chenail, R. (1994) Qualitative research and clinical work: "Private-isation" and "public-ation". The Qualitative Report, **2** (1), 1-8.

Chenail, R. (1997) Keeping things plumb in qualitative research. The Qualitative Report, **3** (3), 1-7.

Chenitz, W. (1986) The informal interview. In From Practice to Grounded Theory: Qualitative Research in Nursing. (eds W. Chenitz & J. Swanson), pp. 79-90. Sydney: Addison-Wesley Publishing Company.

Chenitz, W. & Swanson, J. (1986) From Practice to Grounded Theory: Qualitative Research in Nursing. Sydney: Addison-Wesley Publishing Company.

Chesney, M. (2001) Dilemmas of self in the method. Qualitative Health Research, **11** (1), 127-135.

Chia, R. (1996) The problem of reflexivity in organisational research: Towards a postmodern science of organisation. Organisation, **3** (1), 31-59.

Choi, B. & Lee, H. (2002) Knowledge management strategy and its link to knowledge creation process. Expert Systems with Applications, **23**, 173-187.

Choo, C. (1998) The Knowing Organisation: How Organisations Use Information to Construct Meaning, Create Knowledge, and Make Decisions. New York, NY: Oxford University Press.

Cicmil, S. (1999) An insight into management of organisational change projects. Journal of Workplace Learning, **11** (1), 5-15.

Clancey, W., Sachs, P., Sierhuis, M. & van Hoof, R. (1998) Brahms: Simulating practice for work systems design. International Journal of Human-Computer Studies, **49** (6), 831-865.

Clancy, M. (1979) From Memory to Written Records 1066-1300. Cambridge, MA: Harvard University Press.

Clarke, B., James, C. & Kelly, J. (1996) Reflective practice: Reviewing the issues and refocusing the debate. International Journal of Nursing Studies, **33** (2), 171-180.

Clarke, C. (1999) Family care giving for people with dementia: Some implications for policy and professional practice. Journal of Advanced Nursing, **29** (3), 712-720.

Clarke, C. & Procter, S. (1999) Practice development: Ambiguity in research and practice. Journal of Advanced Nursing, **30** (4), 975-982.

Clarke, C. & Wilcockson, J. (2001) Professional and organisational learning: Analysing the relationship with the development of practice. Journal of Advanced Nursing, **34** (2), 264-272.

Clarke, C. & Wilcockson, J. (2002) Seeing need and developing care: Exploring knowledge for and from practice. International Journal of Nursing Studies, **39**, 397-406.

Clarke, J. (1999) Hermeneutic analysis: A qualitative decision trail. International Journal of Nursing Studies, **36**, 363-369.

Clarke, M. & Meldrum, M. (1999) Creating change from below: Early lessons for agents of change. The Leadership & Organisation Development Journal, **20** (2), 70-80.

Claver, E., Llopis, J., Gasco, J., Molina, H. & Conca, F. (1999) Public administration: From bureaucratic culture to citizen-orientated culture. The International Journal of Public Sector Management, **12** (5), 455-464.

Clifford, J. (1986) Introduction: Partial truths. In Writing Culture: The Poetics and Politics of Ethnography. (eds J. Clifford & G. Marcus), pp. 1-26. London: University of California Press.

Clifford, J. & Marcus, G. (1986) Writing Culture: The Poetics and Politics of Ethnography. London: University of California Press.

Cody, A. (1999) Health visiting as therapy: A phenomenological perspective. Journal of Advanced Nursing, **29** (1), 119-127.

Coffey, A. (2000) The Ethnographic Self. London: Sage.

Coghlan, D. (2000) Interlevel dynamics in clinical inquiry. Journal of Organisational Change Management, **13** (2), 190-200.

Cohen, D. (1998) Toward a knowledge context: Report on the first annual U.C. Berkeley forum on knowledge and the firm. California Management Review, **40** (3), 22-39.

Cohen, L. & Manion, L. (1985) Research Methods in Education. (2nd edn). Kent: Croom Helm.

Cohen, M. & Golembiewski, R. (1984) Public Personnel Update. New York: Dekker.

Cohen, M., March, J. & Olsen, J. (1972) A garbage can model of organisational choice. Administration Science Quarterly, **17** (1), 1-25.

Collins, H. (1990) Artificial Experts: Social Knowledge and Intelligent Machines. Cambridge, Mass.: MIT Press.

Colwell, C. (1994) The retreat of the subject in the late Foucault. Philosophy Today, **Spring**, 56-69.

Comaroff, J. & Comaroff, J. (1994) Ethnography and The Historical Imagination. Boulder: Westview Press.

Connelly, J., Knight, T., Cunningham, C., Duggan, M. & McClenahan, J. (1999) Rethinking public health: New training for new times. Journal of Management in Medicine, **13** (4), 210-217.

Constant, E. (1980) The Origins of the Turbojet Revolution. Baltimore: Johns Hopkins University Press.

Constant, E. (1987) The social locus of technological practice: Community, system or organisation. In The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology. (eds W. Bijker, T. Hughes & T. Pinch), pp. 223-242. Cambridge, MA: MIT Press.

Contu, A. & Willmott, H. (2003) Re-embedding situatedness: The importance of power relations in learning theory. Organisational Science, **14** (3), 283-296.

Cook, S. & Brown, J. (1999) Bridging epistemologies: The generative dance between organisational knowledge and organisational knowing. Organisation Science, **10** (4), 381-400.

Cook, S. & Yanow, D. (1993) Culture and organisational learning. Journal of Management Inquiry, **2**, 373-390.

Cooper, R. (1989) Modernism, postmodernism and organisational analysis 3: The contribution of Jacques Derrida. Organisation Studies, **10** (4), 479-502.

- Cooper, R. & Burrell, G. (1988) Modernism, postmodernism and organisational analysis: An introduction. Organisation Studies, **9** (1), 91-112.
- Coopey, J. (1998) Learning to trust and trusting to learn: A role for radical theatre. Management Learning, **29** (3), 365-382.
- Cott, C. (1997) We decide, you carry it out: A social network analysis of multidisciplinary long-term care teams. Social Science and Medicine, **45** (9), 1411-1421.
- Courpasson, D. (2000) Managerial strategies of domination: Power in soft bureaucracies. Organisation Studies, **21** (1), 141-161.
- Cowley, S. (1995) In health visiting, a routine visit is one that has passed. Journal of Advanced Nursing, **22**, 276-284.
- Crapanzano, V. (1986) Hermes' dilemma: The masking of subversion in ethnographic description. In Writing Culture: The Poetics and Politics of Ethnography. (eds J. Clifford & G. Marcus), pp. 51-76. London: University of California Press.
- Creswell, J. (1998) Qualitative Inquiry and Research Design: Choosing Among Five Traditions. Thousand Oaks, CA: Sage.
- Crotty, M. (1998) The Foundations of Social Research: Meaning and Perspective in the Research Process. Sydney: Allen & Unwin.
- Cunha, M. & Cunha, J. (2003) Organisational improvisation and change: Two syntheses and a filed gap. Journal of Organisational Change Management, **16** (2), 169-185.
- Cusick, A. (2001) Personal frames of reference in professional practice. In Practice Knowledge & Expertise. (eds J. Higgs & A. Titchen), pp. 91-95. Melbourne: Butterworth-Heinemann.
- Cutcliffe, J. & McKenna, H. (1999) Establishing the credibility of qualitative research findings: The plot thickens. Journal of Advanced Nursing, **30** (2), 374-80.
- Cyert, R. & March, J. (1963) A Behavioural Theory of the Firm. Englewood Cliffs, NJ: Prentice Hall.
- Daft, D. & Weick, K. (1984) Towards a model of organisations as interpretation systems. Academy of Management Review, **9** (2), 284-295.

- Davenport, E. (2001) Knowledge management issues for online organisations: 'Communities of practice' as an exploratory framework. Journal of Documentation, **57** (1), 61-75.
- Davenport, T. & Prusak, L. (1997) Working Knowledge: How Organisations Manage What They Know. Boston Mass: Harvard University Press.
- Davenport, T. & Short, J. (1990) The new industrial engineering: Information technology and business process redesign. Sloan Management Review, **31** (4), 11-27.
- Davies, C. (1999) Reflexive Ethnography: A Guide to Researching Selves and Others. London: Routledge.
- Davis, M. (1986) Observations in natural settings. In From Practice to Grounded Theory: Qualitative Research in Nursing. (eds W. Chenitz & J. Swanson), pp. 48-65. Sydney: Addison-Wesley Publishing Company.
- Dawson, M. (1999) Wanted: Helpers not hero's. The British Journal of Administrative Management, **Nov/Dec**, 13-15.
- Dawson, P. (1997) In at the deep end: Conducting processual research on organisational change. Scand. Journal of Management, **13** (4), 389-405.
- de Laine, M. (1997) Ethnography: Theory and Applications in Health Research (1 edn). Sydney: MacLennan and Petty.
- de Laine, M. (2000) Fieldwork, Participation and Practice. London: Sage.
- De Michelis, G. (1997) Work processes, organisational structures and cooperation supports: Managing complexity. A. Rev. Control, **21**, 149-157.
- Dean, M. (1999) Governmentality. Thousand Oaks, CA: Sage.
- Degeling, P., Kennedy, J., Hill, M., M., C. & Holt, J. (1998) Professional Sub-Cultures and Hospital Reform. Sydney: The Centre for Hospital Management and Information Systems Research - The University of New South Wales Australia, and The Department of Social Policy, University of Newcastle upon Tyne.
- Denscombe, M. (1998) The Good Research Guide. Bershire, England: Open University Press.
- Denzin, N. (1989) The Research Act: A Theoretical Introduction into the Sociological Methods. Edgewood Cliffs, N.J.: Prentice Hall.

Denzin, N. (1997) Interpretive Ethnography: Ethnographic Practices for the 21st Century. London: Sage.

Denzin, N. & Lincoln, Y. (1994) Introduction: Entering the field of qualitative research. In Handbook of Qualitative Research (eds N. Denzin & Y. Lincoln), pp. 1-18. Thousand Oaks, CA: Sage.

Denzin, N. & Lincoln, Y. (2000) Handbook of Qualitative Research. Thousand Oaks, CA: Sage.

Dev Amar, A. (2001) Leading for innovation through symbiosis. European Journal of Innovation Management, **4** (3), 126-132.

Diamond, M. (1998) Organisational and personal vicissitudes of change. Public Policy and Management Review, **June**, 478-483.

Dickens, L. & Watkins, K. (1999) Action research: Rethinking Lewin. Management Learning, **30** (2), 127-140.

Dirks, K. & Ferrin, D. (2001) The role of trust in organisational settings. Organisational Science, **12** (4), 450-467.

Dixon, N. (1997) The hallways of learning. Organisational Dynamics, **25** (4), 23-34.

Dobuzinskis, L. (1997) Historical and epistemological trends in public administration. Journal of Management History, **3** (4), 298-316.

Donzelot, J. (1979) The Policing of Families. London: Hutchinson.

Dougherty, D. (2001) Reimagining the differentiation and integration of work for sustained product innovation. Organisation Science, **12** (5), 612-631.

Drucker, P. (1994) Innovation and Entrepreneurship: Practice and Principles. Oxford: Butterworth-Heinemann.

Du Gay, P. (2000) In Praise of Bureaucracy. Thousand Oaks, CA: Sage.

Duck, J. (1993) Managing change: The art of balancing. Harvard Business Review (Nov-Dec), 109-118.

Dunphy, D. (1996) Organisational change in corporate settings. Human Relations, **49** (5), 541-552.

Easterby-Smith, M., Snell, R. & Gherardi, S. (1998) Organisational learning: Diverging communities of practice? Management Learning, **29** (3), 259-272.

- Eisenhart, K. (1989) Building theories from case study research. Academy of Management Review, **14** (4), 532-550.
- Eisner, E. (1991) The Enlightened Eye: Qualitative Inquiry and the Enhancement of Educational Practice. New York: Falmer.
- Ely, M., Anzul, M., Friedman, T., Garner, D. & Steinmetz, A. (1991) Doing Qualitative Research: Circles within Circles. New York: Falmer.
- Ely, M., Vinz, R., Downing, M. & Anzul, M. (1997) On Writing Qualitative Research. London: Falmer Press.
- Eraut, M. (2000) Non-formal learning and tacit knowledge in professional work. British Journal of Educational Psychology, **70**, 113-136.
- Fergusson, D. & Woodward, L. (1999) Maternal age and educational and psychosocial outcomes in early adulthood. Journal of Child Psychology and Psychiatry, **40**, 479-489.
- Fernie, S., Green, S., Weller, S. & Newcombe, R. (2003) Knowledge sharing: Context, confusion and controversy. Journal of Project Management, **21** (3), 177-187.
- Fetterman, D. (1989) Ethnography: Step by Step. Newbury Park: Sage.
- Finch, J. (1986) Research and Policy. Lewes: Falmer.
- Finlay, L. (2002) "Outing" the researcher: The providence, process and practice of reflexivity. Qualitative Health Research, **12** (4), 531-543.
- Fiorino, D. (1997) Strategies for regulatory reform: Forward compared to backward mapping. Policy Studies Journal, **25** (2), 249-266.
- Fleck, L. (1979) Genesis and Development of a Scientific Fact. Chicago: University of Chicago Press.
- Flynn, R. (2002) Clinical governance and governmentality. Health, Risk & Society, **4** (2), 155-173.
- Foley, E. (1984) Changing roles of nurses within the health care organisation. The Australian Nurses Journal, **13** (9), 41-42.
- Fontana, A. & Frey, J. (1994) Interviewing: The art of science. In Handbook of Qualitative Research (eds N. Denzin & Y. Lincoln), pp. 361-376. Thousand Oaks, CA: Sage.

- Fook, J., M., R. & Hawkins, L. (2000) Professional Expertise: Practice, Theory and Education for Working in Uncertainty. London: Whiting & Birch Ltd.
- Foote, M., Matson, E., Weiss, L. & Wenger, E. (2002) Leveraging group knowledge for high performance decision making. Organisational Dynamics, **31** (3), 280-295.
- Ford, C. & Ogilvie, D. (1996) The role of creative action in organisational learning and change. Journal of Organisational Change, **9** (1), 54-62.
- Ford, J. (1999) Organisational change as shifting conversations. Journal of Organisational Change Management, **12** (6), 480-500.
- Ford, J. & Ford, L. (1994) Logics of identity, contradiction and attraction in change. Academy of Management Review, **19** (4), 756-786.
- Ford, J. & Ford, L. (1995) The role of conversations in producing intentional change in organisations. Academy of Management Review, **20** (3), 541-571.
- Foucault, M. (1979) Governmentality. Ideology & Consciousness, **6**, 5-21.
- Francis, K. (2001) Service to the poor: The foundations of community nursing in England, Ireland and New South Wales. International Journal of Nursing Practice, **11**, 167-176.
- Franklin, C. (1996) Learning to teach qualitative research: Reflections of a qualitative researcher. In The Methods and Methodologies of Qualitative Family Research. (eds M. Sussman & J. Gilgun), pp. 241-274. New York: The Haworth Press.
- Freed, A. (1999) Communities of practice and pregnant women: Is there a connection? Language in Society, **28** (2), 257-271.
- Friedman, A. (1977) Industry and Labour: Class Struggle at Work and Monopoly Capitalism. London: Macmillan.
- Frissen, P. (1999) Politics, Governance and Technology: A Postmodern Narrative on the Virtual State. Massachusetts: Edward Elgar.
- Frost, P. (1999) Why compassion counts. Journal of Management Inquiry, **8** (2), 127-134.
- Fullan, M. (1999) Change Forces: The Sequel. London: Falmer.

- Gagliardi, P. (1997) Exploring the aesthetic side of organisational life. In Handbook of Organisational Studies (eds S. Clegg, S. Hardy & W. Nord), pp. 565-580. London: Sage.
- Gans, H. (1999) Participant observation in the era of "ethnography". Journal of Contemporary Ethnography, **28** (5), 540-548.
- Gastaldo, D. & Holmes, D. (1999) Foucault and nursing: A history of the present. Nursing Inquiry, **6** (4), 231-240.
- Geertz, C. (1973) The Interpretation of Cultures. New York: Basic Books.
- Geertz, C. (1983) Local Knowledge: Further Essays in Interpretive Anthropology. New York: Basic Books.
- Gephart, R., Boje, D. & Thatchenkery, T. (1996) Postmodern management and the coming crises of organisational analysis. In Postmodern Management and Organisation Theory. (eds D. Boje, R. Gephart & T. Thatchenkery), pp. 1-20. London: Sage.
- Gergen, K. (1985) The Social Construction of the Person. New York: Springer-Verlag.
- Gergen, K. & Gergen, M. (1991) Toward reflexive methodologies. In Research and Reflexivity. (ed F. Steier), pp. 76-95. London: Sage.
- Gergen, K. & Thatchenkery, T. (1996) Organisation science as social construction: Postmodern potentials. Journal of Applied Behavioral Science, **32** (4), 356-377.
- Gherardi, S. (2001) From organisational learning to practice-based knowing. Human Relations, **54** (1), 131-139.
- Gherardi, S. & Nicolini, D. (2000) The organisational learning of safety in communities of practice. Journal of Management Inquiry, **9** (1), 7-18.
- Gherardi, S. & Nicolini, D. (2000b) Sociological foundation of organisational learning. In The Handbook of Organisational Learning. (eds M. Dierkes, A. Berthoin Antal, J. Child, *et al.*), . Oxford: Oxford University Press.
- Gherardi, S., Nicolini, D. & Odella, F. (1998) Towards a social understanding of how people learn in organisations. Management Learning, **29** (3), 273-297.
- Giacomini, M. & Cook, D. (2000a) Qualitative research in health care: A. Are the results of the study valid? JAMA, **284** (3), 357-362.

Giacomini, M. & Cook, D. (2000b) Qualitative research in health care: B. What are the results and how do they help me care for my patients? JAMA, **284** (4), 478-482.

Giddens, A. (1984) The Constitution of Society. Cambridge: Polity Press.

Gilbert, T. (1998) Towards a politics of trust. Journal of Advanced Nursing, **27**, 1010-1016.

Gilbert, T. (2001) Reflective practice and clinical supervision: Meticulous rituals of the confessional. Journal of Advanced Nursing, **36** (2), 199-205.

Gilbert, T. (2003) Exploring the dynamics of power: A Foucauldian analysis of care planning in learning disabilities services. Nursing Inquiry, **10** (1), 37-46.

Gilson, L. (2003) Trust and the development of health care as a social institution. Social Science and Medicine, **56** (7), 1453-1468.

Gittell, J. (2001) Supervisory span, relational coordination and flight departure performance: A reassessment of postbureaucracy theory. Organisation Science, **12** (4), 468-483.

Gittell, J. & Weiss, L. (2004) Coordination networks within and across organisations: A multi-level framework. Journal of Management Studies, **41** (1), 127-153.

Glaser, B. & Strauss, A. (1967) The Discovery of Grounded Theory: Strategies for Qualitative Research. (Tenth, 1979 edn). New York: Aldine Publishing Company.

Goffman, E. (1961) Encounters. New York, NY: The Bobbs-Merrill Company.

Gold, J. & Watson, S. (2001) The value of a story in organisation learning. Futures, **33**, 507-518.

Goleman, D. (2000) Leadership that gets results. Harvard Business Review (March-April), 78-88.

Goodenough, W. (1976) Multiculturalism as the normal human experience. Anthropology and Education Quarterly, **7** (4), 4-7.

Goodwin, C. (1995) Seeing in depth. Social Studies of Science, **25**, 237-274.

Goorman, E. & Berg, M. (2002) Modeling nursing activities: Electronic patient records and their discontents. Nursing Inquiry, **7**, 3-9.

Goossen, W., Epping, P., Dassen, T., Hasman, A. & van den Heuvel, W. (1997) Can we solve current problems with nursing information systems? Computer Methods and Programs in Biomedicine, **54** (1-2), 85-91.

Gordon, N. (2002) On visibility and power: An Arendtian corrective of Foucault. Human Studies, **25**, 125-145.

Goss, T., Pascale, R. & Athos, A. (1997) The reinvention roller coaster: Risking the present for a powerful future. Harvard Business Review (Nov-Dec), 98-108.

Greenhalgh, T. & Taylor, R. (1997) Papers that go beyond numbers. British Medical Journal, **315** (7110), 740-746.

Greenwood, R. & Lachman, R. (1996) Change as an underlying theme in professional service organisations: An introduction. Organisation Studies, **17** (4), 563-572.

Grol, R. & Grimshaw, J. (2003) From best evidence to best practice: Effective implementation of change in patients' care. Lancet, **363** (9391), 1225-1239.

Hadley, J. (2000) Better health care decisions: Fulfilling the promise of health services research. Health Services Research, **35** (1), 175-186.

Hage, J. (1999) Organisation innovation and organisational change. Annual Review of Sociology, **25**, 597-622.

Haldin-Herrgard, T. (2000) Difficulties in diffusion of tacit knowledge in organisations. Journal of Intellectual Capital, **1** (4), 357-365.

Hall, H. (2001,) Social Exchange for Knowledge Exchange. Paper presented at the Managing Knowledge: Conversations and Critiques, University of Leicester.

Hammer, M. & Champy, J. (1993) Reengineering the Corporation: A Manifesto for Business Revolution. New York: Harper Business.

Hammersley, M. (1992) What's Wrong with Ethnography? London: Routledge.

Hammersley, M. & Atkinson, P. (1983) Ethnography: Principles in Practice. London: Tavistock.

Hammersley, M. & Atkinson, P. (1991) Ethnography: Principles in Practice. (1st edn). New York: Routledge.

Hammersley, M. & Atkinson, P. (1995) Ethnography: Principles in Practice. (2nd edn). New York: Routledge.

- Hanks, C. & Smith, J. (1999) Implementing nurse home visitation programs. Public Health Nursing, **16** (4), 235-245.
- Hansen, M., Nohria, N. & Tierney, T. (1999) What's your strategy for managing knowledge. Harvard Business Review (March-April), 106-116.
- Hanson, E. (1994) Issues concerning the familiarity of researchers with the research setting. Journal of Advanced Nursing, **20**, 940-942.
- Hardy, C. & Leiba-O'Sullivan, S. (1998) The power behind empowerment: Implications for research and practice. Human Relations, **51** (4), 451-483.
- Harrison, S. (1994) Knowledge into practice: What's the problem? Journal of Management in Medicine, **8** (2), 9-16.
- Harvey, D. (1989) The Condition of Postmodernity. Oxford: Blackwell.
- Harvey, G. & Kitson, A. (1996) Achieving improvement through quality: An evaluation of key factors in the implementation process. Journal of Advanced Nursing, **24** (1), 185-195.
- Harvey, L. & Myers, M. (1995) Scholarship and practice: The contribution of ethnographic research methods to bridging the gap. Information Technology & People, **8** (3), 13-27.
- Hayes, N. & Walsham, G. (2001) Participation in groupware-mediated communities of practice: A socio-political analysis of knowledge working. Information and Organisation, **11**, 263-288.
- Heckscher, C. (1994) Defining the post-bureaucratic type. In The Post-Bureaucratic Organisation: New Perspectives on Organisational Change. (eds C. Heckscher & A. Donnellon), pp. 14-62. London: Sage.
- Helmreich, R. & Merritt, A. (1998) Culture at Work in Aviation and Medicine. Sydney: Ashgate.
- Henderson, A. (1994) Power and knowledge in nursing practice: The contribution of Foucault. Journal of Advanced Nursing, **20**, 935-939.
- Hendry, C. (1996) Understanding and creating whole organisational change through learning theory. Human Relations, **49** (5), 621-641.
- Hewitt, M. (1991) Biopolitics and social policy: Foucault's account of welfare. In The Body: Social Processes and Cultural Theory. (eds M. Featherstone, M. Hepworth & B. Turner), pp. 225-255. London: Sage.

Higgs, J. & Andersen, L. (2001) The knower, the knowing and the known: Threads in the woven tapestry of knowledge In Practice Knowledge & Expertise in the Health Professions. (eds J. Higgs & A. Titchen), pp. 10-21. Melbourne: Butterworth-Heinemann.

Higgs, J., Titchen, A. & Neville, V. (2001) Professional practice and knowledge. In Practice Knowledge & Expertise in the Health Professions. (eds J. Higgs & A. Titchen), pp. 3-9. Melbourne: Butterworth-Heinemann.

Hildreth, P., Kimble, C. & Wright, P. (1998,) Computer Mediated Communications and Communities of Practice. Paper presented at the Proceedings of Ethicomp'98, Erasmus University, The Netherlands.

Hill Bailey, P. (1997) Finding your way around qualitative methods in nursing research. Journal of Advanced Nursing, **25**, 18-22.

Hill Bailey, P. & Tilley, S. (2002) Storytelling and the interpretation of meaning in qualitative research. Journal of Advanced Nursing, **38** (6), 574-583.

Hill, S. (1991) Technological change and the systematisation of organisational culture. In Information Technology in Australia. (ed S. Aungles), pp. 92-113. Kensington: NSW University Press.

Hill, S., Beattie, S. & McDougall, M. (1999) Conducting qualitative research in the health sector: Researcher issues and dilemmas. Health Services Management Research, **12**, 183-189.

Hill, S., Horne, R. & Carter, S. (1991) White collar factory: The transformation of corporation culture in an insurance corporation. In Information Technology in Australia. (ed S. Aungles), pp. 114-148. Kensington, Sydney: University of NSW Press.

Hochschild, A. (1983) The Managers Heart: Commercialisation of Human Feeling. Berkeley: University of California Press.

Hofstede, G., Neuijen, B., Ohayv, D. & Sanders, G. (1990) Measuring organisational cultures: A qualitative study across twenty cases. Administrative Science Quarterly, **35** (2), 286-316.

Hoggett, P. (1996) New modes of control in the public service. Public Administration, **7**, 9-32.

Holmes, D. (2001) From iron gaze to nursing care: Mental health nursing in the age of panopticism. Journal of Psychiatric and Mental Health Nursing, **8**, 7-15.

- Holmes, D. (2002) Police and pastoral power: Governmentality and correctional forensic psychiatric nursing. Nursing Inquiry, **9** (2), 84-92.
- Holmes, D. & Gastaldo, D. (2002) Nursing as means of governmentality. Journal of Advanced Nursing, **38** (6), 557-565.
- Holstein, J. & Gubrium, J. (1994) Phenomenology, ethnomethodology and interpretative practice. In Handbook of Qualitative Research (eds N. Denzin & Y. Lincoln), pp. 262-272. Thousand Oaks, CA: Sage.
- Holzer, M. & Callaghan, K. (1998) Governments at Work. Thousand Oaks: Sage.
- Hood, C., Rothstein, H., Baldwin, R., Rees, J. & Spackman, M. (1999) Where risk society meets the regulatory state. Risk Management, **1**, 21-34.
- Hoskins, M., Liedtka, J. & Roseblum, J. (1998) Beyond teams: Towards an ethic of collaboration. Organisational Dynamics, **Spring**, 34-50.
- Huber, G. (1991) Organisational learning: The contributing processes and literatures. Organisation Science, **2**, 88-115.
- Hurley, R. (1999) Qualitative research and the profound grasp of the obvious. Health Services Research, **34** (5), 1119-1136.
- Hutchins, E. (1995) Cognition in the Wild. London: The MIT Press.
- Iedema, R. (2001) Resemiotisation. Semiotica, **137** (1-4), 23-39.
- Iedema, R. (2003) Discourses of Post-Bureaucratic Organisation. Amsterdam: John Benjamins Publishing Co.
- Iedema, R. & Scheeres, H. (2003) From doing to talking work: Renegotiating knowing, doing and identity. Journal of Applied Linguistics, **24** (3), 316-337.
- Ingraham, P., Thompson, J. & Sanders, R. (1998) Transforming Governments. San Francisco: Jossey Bass.
- Irurita, V. & Williams, A. (2001) Balancing and comprising: Nurses and patients preserving integrity of self and each other. International Journal of Nursing Studies, **38**, 579-589.
- Janesick, V. (1994) The dance of qualitative research design: Methaphor, methodolatry and meaning. In Handbook of Qualitative Research (eds N. Denzin & Y. Lincoln), pp. 209-219. Thousand Oaks, CA: Sage.

Jankowicz, D. (2001) Why does subjectivity make us nervous? Making the tacit explicit. Journal of Intellectual Capital, **2** (1), 61-73.

Johannessen, J.-A., Olaisen, J. & Olsen, B. (2001) Mismanagement of tacit knowledge: The importance of tacit knowledge, the danger of information technology and what to do about it. International Journal of Information Management, **21**, 3-20.

Johnson, C. (2001) A survey of current research on on-line communities of practice. Internet and Higher Education, **4** (1), 45-60.

Johnson, J. (1997a) Generalisability in qualitative research: Excavating the discourse. In Completing a Qualitative Project. (ed J. Morse), pp. 191-208. Thousand Oaks, CA: Sage.

Johnson, M. (1999) Observations on positivism and pseudoscience in qualitative nursing research. Journal of Advanced Nursing, **30** (1), 67-73.

Johnson, R. (1997b) Examining the validity structure of qualitative research. Education, **118** (2), 282-293.

Jones, J. & Cheek, J. (2003) The scope of nursing in Australia: A snapshot of the challenges and the skills needed. Journal of Nursing Management, **11**, 121-129.

Jones, R. (1995) Why do qualitative research? It should begin to close the gap between the sciences of discovery and implementation. British Medical Journal, **311** (6996), 2.

Jorgensen, K. (2002) The meaning of local knowledges, genealogy and organisational analysis. Scandinavian Journal of Management, **18**, 29-46.

Judge, W., Fryxell, G. & Dooley, R. (1997) The new tasks of R&D management: Creating goal directed communities for innovation. California Management Review, **39** (3), 72-85.

Junnarkar, B. (1997) Leveraging collective intellect by building organisational capabilities. Expert Systems with Applications, **13** (1), 29-40.

Karasti, H. (2001) Bridging work practice and system design: Integrating systemic analysis, appreciative intervention and practitioner participation. Computer Supported Cooperative Work, **10**, 211-246.

Katzenbach, J. (1993) The discipline of teams. Harvard Business Review (March-April), 111-124.

Kavanagh, D. & Kelly, S. (2002) Sensemaking, safety and situated communities in (con)temporary networks. Journal of Business Research, **55**, 583-594.

Keen, J. & Packwood, T. (1995) Case study evaluation. (Qualitative Research, Part 7). British Medical Journal, **311** (7002), 444-447.

Keeping, D., Najman, M., Western, M. & William, M. (1996) A prospective longitudinal study of social psychological and obstetric factors in pregnancy: Response rate and demographic characteristic of 8556 respondents. British Journal of Obstetrics and Gynecology, **96**, 289-297.

Kelly, M. & May, D. (1982) Good and bad patients: A review of the literature and a theoretical critique. Journal of Advanced Nursing, **7**, 147-156.

Kemmis, S. (1985) Action research and the politics of reflection. In Reflection: Turning Experience into Learning (eds D. Boud, R. Keogh & D. Walker), pp. 54-63. London: Kogan Page.

Kemshall, H. (2000) Conflicting knowledges on risk. Health, Risk & Society, **2**, 143-158.

Kim, D. (1993) The link between individual and organisational Learning. Sloan Management Review, **35** (1), 37-50.

Kindig, D. (1999) Beyond health services research. Health Services Research, **34**, 205-214.

King, I. & Rowe, A. (1999) Space and the not-so-final frontiers: Re-presenting the potential of collective learning for organisations. Management Learning, **30** (4), 431-448.

King, N. & Anderson, N. (1995) Innovation and Change in Organisations. London: Routledge.

Kitchener, M. & Whipp, R. (1997) Tracks of change in hospitals: A study of quasi-market transformation. International Journal of Public Sector Management, **10** (12), 47-61.

Kleiner, B. & Corrigan, W. (1989) Understanding organisational change. Leadership and Organisational Development Journal, **10**, 25-31.

Kleinman, G., Seigel, P. & Eckstein, C. (2001) Mentoring and learning: The case of CPA firms. Leadership and Organisational Development, **22** (1), 22-33.

Knight, P. (2002) A systemic approach to professional development: Learning as practice. Teacher and Teacher Education, **18**, 229-241.

- Koch, T. & Harrington, A. (1998) Reconceptualising rigour: The case for reflexivity. Journal of Advanced Nursing, **28** (4), 882-890.
- Kogut, B. & Zander, U. (1992) Knowledge of the firm, combinative capabilities and the replication of technology. Organisation Science, **3** (5), 383-397.
- Koskinen, K. (2000) Tacit knowledge as a promoter of project success. European Journal of Purchasing and Supply Management, **6**, 41-47.
- Kotter, J. (1996) Leading Change: Why Transformation Efforts Fail. Boston: Harvard Business School Press.
- Krippendorff, K. (1991) Reconstructing (some) communication research methods. In Research and Reflexivity. (ed F. Steier), pp. 78-89. London: Sage.
- Krohn, U., Davies, N. & Weeks, R. (1999) Concept lattices for knowledge management. BT Technology Journal, **17** (4), 108-116.
- Lam, A. (1997) Embedded firms, embedded knowledge: Problems of collaboration and knowledge transfer in global cooperative ventures. Organisation Studies, **18** (6), 973-996.
- Lang, J. (2001) Managerial concerns in knowledge management. Journal of Knowledge Management, **5** (1), 43-57.
- Langley, A. (1999) Strategies for theorising from process data. The Academy of Management Review, **24** (4), 691-710.
- Larkin, T. & Larkin, S. (1996) Reaching and changing frontline employees. Harvard Business Review (May-June 1996), 95-104.
- Lather, P. (1991) Getting Smart: Feminist Research and Pedagogy with/in the Postmodern. New York: Routledge.
- Latour, B. (1986) Visualisation and cognition: Thinking with eyes and hands. Knowledge and Society: Studies in the Sociology of Culture Past and Present, **6**, 1-40.
- Latour, B. (1992) Where are the missing masses? Sociology of a few mundane artefacts. In Shaping Technology-Building Society: Studies in Sociotechnical Change. (eds W. Bijker & J. Law), pp. 225-259. Cambridge, MA: MIT Press.
- Laudon, K. & Laudon, J. (1998) Management Information Systems. New Approaches to Organisational and Technology. New York: Macmillan.

Lave, J. (1988) Cognition in Practice; Mind, Mathematics and Culture in Everyday Life. New York: Cambridge University Press.

Lave, J. & Wenger, E. (1991) Situated Learning: Legitimate Peripheral Participation. Cambridge: Cambridge University Press.

Law, J. (1987) Technology and heterogeneous engineering: The case of Portuguese Expansion. In The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology. (eds W. Bijker, T. Hughes & T. Pinch), pp. 111-134. London: MIT Press.

Lawler, J. (1991) Behind the Screens: Nursing, Somology and the Problem of the Body. Edinburgh: Churchill Livingstone.

Lee, K. (1999) Knowledge-Assimilation: A Case of Learning and Co-operation Between Communities of Practice. Copenhagen: New social Science Monographs.

Lee, T., Yeh, C. & Ho, L. (2002) Application of a computerised nursing care plan system in one hospital: Experiences of ICU nurses in Taiwan. Journal of Advanced Nursing, **39**, 61-67.

Leininger, M. (1985) Qualitative Research Methods in Nursing. New York: Grune & Stratton Inc.

Leininger, M. (1997) Qualitative research methods in nursing. In Ethnography: Theory and Applications in Health Research. (ed M. de Laine), pp. 115-142. Sydney: MacLennan and Petty.

Leonard, D. & Sensiper, S. (1998) The role of tacit knowledge in group innovation. California Management Review, **40** (3), 112-132.

Leonard-Barton, D. (1995) Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation. Cambridge, MA: Harvard Business School Press.

Levitt, B. & March, J. (1988) Organisational learning. Annual Review of Sociology, **14**, 319-340.

Lewin, K. (1946) Action research and minority problems. Journal of Social Issues, **2** (4), 34-46.

Lewin, K. (1958) Group decision and social change. In Readings in Psychology. (eds E. Maccoby, T. Newcomb & E. Hartley), pp. 197-211. London: Methuen & Co.

- Liberman, J. (1999) From walkabout to meditation: Crafts and ethics in field inquiry. Qualitative Inquiry, **5** (1), 47-63.
- Liedtka, J. (1999) Linking competitive advantage with communities of practice. Journal of Management Inquiry, **8** (1), 5-16.
- Light, D. (1999) Here we go again: Repeating implementation errors. British Medical Journal, **319** (7210), 616-618.
- Light, P. (1998) Sustaining Innovation: Creating Nonprofit and Government Organisations that Innovate Naturally. San Francisco: Jossey Bass.
- Lincoln, Y. & Guba, E. (1985) Naturalistic Inquiry. Beverly Hills, CA: Sage.
- Lipson, J. (1989) The use of self in ethnographic research. In Qualitative Natural Research: A Contemporary Dialogue. (ed J. Morse), pp. 61-75. Maryland: Aspen Publishers.
- Lipson, J. (1991) The use of self in ethnographic research. In Qualitative Nursing Research: A Contemporary Dialogue. (ed J. Morse), pp. 73-89. London: Sage.
- Lipson, J. (1994) Ethical issues in ethnography. In Critical Issues in Qualitative Research Methods. (ed J. Morse), pp. 333-355. London: Sage.
- Lipton, M. (1996) Demystifying the development of an organisational vision. Sloan Management Review, **37** (4), 83-92.
- Lofland, J. & Lofland, L. (1995) Analysing Social Settings: A Guide to Qualitative Observation and Analysis. (3rd edn). Belmont, CA: Wadworth.
- Loxley, A. (1997) Collaboration in Health and Welfare. London: Jessica Kingsley Publishers.
- Luke, R. & Begun, J. (1997) Permeating organisational boundaries: The challenge of integration in healthcare. Frontiers of Health Services Management, **13** (1), 46-49.
- Macdonald, S. (2001) British Social Anthropology. In Handbook of Ethnography. (eds P. Atkinson, A. Coffey, S. Delmont, *et al.*), pp. 60-79. London: Sage.
- MacKenzie, D. (1987) Missile accuracy: A case study in the social processes of technological change. In The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology. (eds W. Bijker, T. Hughes & T. Pinch), pp. 195-222. London: MIT Press.

Madill, A., Jordan, A. & Shirley, C. (2000) Objectivity and reliability in qualitative analysis: Realist, contextualist and radical constructionist epistemologies. British Journal of Psychology, **91**, 1-20.

Malinowski, B. (1922) Argonauts of the Western Pacific. London: Routledge & Kegan Paul.

Malone, D. (2002) Knowledge management: A model for organisational learning. International Journal of Accounting Information Systems, **3**, 111-123.

Manias, E. & Street, A. (2000) Possibilities for critical social theory and Foucault's work: A toolbox approach. Nursing Inquiry, **7**, 50-60.

Manias, E. & Street, A. (2000a) Legitimation of nurses' knowledge through policies and protocols in clinical practice. Journal of Advanced Nursing, **32** (6), 1467-1475.

Manias, E. & Street, A. (2001) Rethinking ethnography: Reconstructing nursing relationships. Journal of Advanced Nursing, **33** (2), 234-242.

Mano-Negrin, R. & Mittman, B. (2001) Theorising the social within physician decision making. Journal of Management in Medicine, **15** (4), 259-265.

March, J. (1991) How decisions happen in organisations. Human-Computer Interaction, **6** (1), 95-117.

Marcus, C. (1994) What comes (just) after 'post'? the case of ethnography. In Handbook of Qualitative Research. (eds N. Denzin & Y. Lincoln), pp. 563-574. London: Sage.

Marcus, G. & Fisher, M. (1986) Anthropology as Cultural Critique: An Experimental Moment in the Human Sciences. Chicago: University of Chicago Press.

Marks, M. & Shaw, R. (1995) Sustaining change: Creating the resilient organisation. In Discontinuous Change: Leading Organisational Transformation. (eds D. Nadler, R. Shaw & A. Walton), pp. 97-117. San Francisco: Jossey-Bass.

Mascitelli, R. (2000) From experience: Harnessing tacit knowledge to achieve breakthrough innovation. Journal of Product Innovation Management, **17**, 179-193.

Maudsley, G. & Strivens, J. (2000) Promoting professional knowledge, experiential learning and critical thinking for medical students. Medical Education, **34**, 535-544.

- May, C. (1992) Nursing work, nurses' knowledge and the subjectification of the patient. Sociology of Health & Illness, **14** (4), 472-487.
- May, C. & Ellis, N. (2001) When protocols fail: Technical evaluation, biomedical knowledge and the social production of "facts" about a telemedicine clinic. Social Science & Medicine, **53**, 989-1002.
- May, T. (1997) Social Research: Issues, Methods and Process. Buchingham: Open University Press.
- Maylone, T. (1998) Introduction. Library Trends, **46** (4), 597-600.
- Mays, N. & Pope, C. (1995a) Observational methods in health care settings. (Qualitative Research Part 3). British Medical Journal, **311** (6998), 182-185.
- Mays, N. & Pope, C. (1995b) Rigor and qualitative research. (Qualitative Research, Part 2). British Medical Journal, **310** (6997), 109-113.
- Mays, N. & Pope, C. (2000) Assessing quality in qualitative research. British Medical Journal, **320**, 50-52.
- McCallin, A. (2001) Interdisciplinary practice a matter of teamwork: An integrated literature review. Journal of Clinical Nursing, **10**, 419-428.
- McDermott, R. (1999a) Learning across teams: How to build communities of practice in team organisations. Knowledge Management Journal, **8** (May/ June), 32-36.
- McDermott, R. (1999b) Knowing in community: 10 critical success factors in building communities of practice: <http://www.co-i-l.com/coil/knowledge-garden/cop/knowing.shtml>.
- McDermott, R. (1999c) Nurturing three dimensional communities of practice: <http://www.co-i-l.com/coil/knowledge-garden/cop/dimensional.shtml>.
- McFadzean, E. (1999) Encouraging creative thinking. Leadership & Organisation Development Journal, **20** (7), 374-383.
- McGill, M. & Slocum, J. (1998) A little leadership, please? Organisational Dynamics, **26** (3), 39-49.
- McLaughlin, M. & Mitra, D. (2001) Theory-based change and change-based theory: Going deeper, going broader. Journal of Educational Change, **2**, 301-323.
- McPhail, G. (1997) Management of change: An essential skill for nursing in the 1990s. Journal of Nursing Management, **5** (4), 199-205.

- Meek, V. (1988) Organisation culture: Origins and weaknesses. Organization Studies, **9** (4), 453-473.
- Melia, K. (1987) Learning and Working: The Occupational Socialisation of Nurses. London: Tavistock.
- Mercer, N. (1995) The Guided Construction of Knowledge. Boston: New Science.
- Milles, R. & Snow, C. (1978) Organisational Structure, Strategy and Process. New York: McGraw-Hill.
- Miles, G., Miles, R., Perrone, V. & Edvinsson, L. (1998) Some conceptual and research barriers to the utilisation of knowledge. California Management Review, **40** (3), 281-288.
- Miles, M. & Huberman, A. (1994) Qualitative Data Analysis: A Sourcebook of New Methods. (2nd edn). Thousand Oaks, CA: Sage.
- Miller, G. (1997) Contextualising texts: Studying organisational texts. In Context and Method in Qualitative Research. (eds G. Miller & R. Dingwall), pp. 77-91. London: Sage.
- Miller, G. & Dingwall, R. (1997) Context and Method in Qualitative Research. London: Sage.
- Miller, P. & Rose, N. (1993) Governing economic life. In Foucault's New Domains. (eds M. Gane & T. Johnson), pp. 75-105. London: Routledge.
- Minichiello, V., Aroni, R., Timewell, E. & Alexander, L. (1995) In-depth Interviewing. (2nd edn). Melbourne: Longman.
- Mintzberg, H., Jorgensen, J., Dougherty, D. & Westley, F. (1996) Some surprising things about collaboration - Knowing how people connect makes it work better. Organisational Dynamics, **Summer**, 60-71.
- Mir, R. & Watson, A. (2000) Strategic management and the philosophy of science: The case for a constructivist methodology. Strategic Management Journal, **21**, 941-953.
- Mirvis, P. (1997) "Soul work" in organisations. Organisation Science, **8** (2), 193-206.
- Montuori, L. (2000) Organisational longevity: Integrated systems thinking, learning and conceptual complexity. Journal of Organisation Change Management, **13** (1), 61-73.

- Morse, J. (1991) Subjects, respondents, informants and participants? Qualitative Health Research, **1** (4), 403-406.
- Morse, J. (1994) Designing funded qualitative research. In Handbook of Qualitative Research (eds N. Denzin & Y. Lincoln), pp. 220-235. Thousand Oaks, CA: Sage.
- Morse, J. (1999) Qualitative methods: The state of the art. Qualitative Health Research, **9** (3), 393-406.
- Morse, J. & Field, P. (1995) Qualitative Research Methods for Health Professionals. Thousand Oaks, CA: Sage.
- Mowday, R. & Sutton, R. (1993) Organisational behaviour: Linking individuals and groups to organisational contexts. Annual Review of Psychology, **44**, 159-229.
- Myers, M. & Young, L. (1997) Hidden agendas, power and managerial assumptions in information systems development: An ethnographic study. Information Technology & People, **10** (3), 224-240.
- Nadler, D. & Tushman, M. (1999) The Organisation of the future: Strategic imperatives and core competencies for the 21st century. Organisational Dynamics, **28** (1), 45-60.
- Nickols, F. (2000) Communities of practice: Definitions, indicators & identifying characteristics: <http://home.att.net/~discon/KM/CoPCharacteristics.htm>.
- Nicolini, D. & Meznar, M. (1995) The social construction of organisation learning: Conceptual and practical issues in the field. Human Relations, **48** (7), 727-746.
- Nonaka, I. (1994) A dynamic theory of organisational knowledge creation. Organisation science, **5** (1), 14-37.
- Nonaka, I. & Takeuchi, H. (1995) The Knowledge-Creating Company. Oxford: Oxford University Press.
- Nutt, P. (1996) Views of implementation approaches by top managers in health service organisations. Hospital and Health Services Administration, **41** (2), 176-196.
- O'Brien, P. (2002) Participation as the key to successful change: A public sector case study. Leadership and Organisational Development Journal, **23** (8), 442-455.

O'Connor, E. (2000) Plotting the organisation: The embedded narrative as a construct for studying change. The Journal of Applied Behavioral Science, **36** (2), 174-192.

O'Dell, C. & Grayson, C. (1998) If only we knew what we know: Identification and transfer of internal best practices. California Management Review, **40** (3), 154-174.

O'Malley, P. (1996) Risk and responsibility. In Foucault and Political Reason: Liberalism, Neoliberalism and Rationalities of Government. (eds A. Barry, T. Osborne & N. Rose), pp. 189-208. London: UCL Press.

Orlikowski, W. (2002) Knowing in practice: Enacting a collective capability in distributed organising. Organisation Science, **13** (3), 249-273.

Orlikowski, W. & Hofman, J. (1997) An improvisational model for change management: The case of groupware technologies. Sloan Management Review, **38** (2), 11-21.

Orr, J. (1990) Sharing knowledge, celebrating identity: Community memory in a service culture. In Collective Remembering. (eds D. Middleton & D. Edwards), pp. 169-189. London: Sage.

Orr, J. (1996) Talking About Machines: An Ethnography of a Modern Job. Ithaca, NY: ILR Press.

Osterman, P. (1994) How common is workplace transformation and who adopts it? Industrial and Labour Relations Review, **47** (2), 173-188.

O'Toole, L. (1997) Implementing public innovations in network settings. Administration & Society, **29** (2), 115-138.

Ottenberg, S. (1990) Thirty years of fieldnotes: Changing relationships to the text. In The Makings of Anthropology. (ed R. Sanjek), pp. 139-160. Ithaca, NY: Cornell University Press.

Palmer, J. & Richards, I. (1999) Get knetted: Network behaviour in the new economy. Journal of Knowledge Management, **3** (3), 191-202.

Pan, S. & Leidner, D. (2003) Bridging communities of practice with information technology in pursuit of global knowledge sharing. Journal of Strategic Information Systems, **12** (1), 71-88.

Park, P. (1999) People, knowledge and change in participatory research. Management Learning, **30** (2), 141-157.

Parker, J. & Wiltshire, J. (1995) The handover: Three modes of nursing practice knowledge. In Scholarship in the Discipline of Nursing, (eds G. Gray & R. Pratt), pp. 151-168. South Melbourne, Australia: Churchill Livingstone.

Patton, M. (1999) Enhancing the quality and credibility of qualitative analysis. Health Services Research, **34** (5), 1189-1208.

Pearson, A. (2000) Nursing practice and nursing science: Building on the past and looking to the future. Joan Durdin Oration, Paper Series Number 6.: <http://www.ioannabriggs.edu.au/services/articles.php>.

Peckover, S. (2002) Supporting and policing mothers: An analysis of the disciplinary practices of health visiting. Journal of Advanced Nursing, **38** (4), 369-377.

Pentland, B. (1995) Information systems and organisational learning: The social epistemology of organisational knowledge systems. Accounting, Mgmt. & Info. Tech., **5** (1), 1-21.

Pettigrew, A., Feerlie, F. & McKee, L. (1992) Shaping Strategic Change. London: Sage.

Philpin, S. (2002) Rituals and nursing: A critical commentary. Journal of Advanced Nursing, **38** (2), 144-151.

Phung, H., Young, L., Greenfield, D., Bauman, A. & Hillman, K. (2001) A framework for monitoring maternal and infant health status. Australian Health Review, **24** (1), 105-115.

Plsek, P. & Wilson, T. (2001) Complexity, leadership and management in healthcare organisations. British Medical Journal, **323** (7315), 746-749.

Polanyi, M. (1958) Personal Knowledge. Chicago: The University of Chicago Press.

Polanyi, M. (1967) The Tacit Dimension. London: Routledge & Paul.

Pollitt, C., Harrison, S., Hunter, D. & Marnoch, G. (1990) No hiding place: On the discomforts of researching the contemporary policy process. Journal of Social Policy, **19** (2), 169-190.

Pope, C. & Mays, N. (1995) Researching the other parts methods cannot reach: An introduction to qualitative methods in health and health services research. BMJ, **311** (6996), 42-45.

Pope, C., Ziebland, S. & Mays, N. (2000) Qualitative research in health care: Analysing qualitative data. British Medical Journal, **320** (7227), 114-116.

Porter, S. (1997) The degradation of academic dogma. Journal of Advanced Nursing, **25**, 655-656.

Porter, T. (1995) Trust in Numbers: Objectivity in Science and Public Life. Princeton: Princeton University Press.

Porter-O'Grady, T. & Wilson, C. K. (1995) The Leadership Revolution in Health Care : Altering Systems, Changing Behaviours. Gaithersburg, Md: Aspen Publishers.

Poster, M. (1990) The Mode of Information: Poststructuralism and Social Context. Cambridge, U.K: Polity Press.

Power, M. (1997) The Audit Society. Oxford: Oxford University Press.

Pratt, M. (1986) Fieldwork in Common Places. In Writing Culture: The Poetics and Politics of Ethnography. (eds J. Clifford & G. Marcus), pp. 27-50. London: University of California Press.

Preski, S. & Walker, L. (1997) Contributions of maternal identity and lifestyle to young children's adjustment. Research in Nursing and Health, **20**, 911-915.

Prewitt, V. (2003) Leadership development for learning organisations. Leadership and Organisation Development Journal, **24** (2), 59-61.

Proenca, E. (1998) Community orientation in health services organisations: The concept and its implementation. Health Care Management Review, **23** (2), 28-38.

Punch, K. (1999) Introduction to Social Research. London: Sage.

Punch, M. (1994) Politics and ethics in qualitative research. In Handbook of Qualitative Research (eds N. Denzin & Y. Lincoln), pp. 1-18. Thousand Oaks, CA: Sage.

Purkis, M. (2001) Managing home nursing care: Visibility, accountability and exclusion. Nursing Inquiry, **8** (3), 141-150.

Rabinow, P. (1977) Reflections on Fieldwork in Morocco. Berkeley: University of California Press.

Raelin, J. (1997) A model of work based learning. Organisation Science, **8** (6), 563-578.

Rainey, H. (1999) Using comparisons of public and private organisations to assess innovative attitudes among members of organisations. Public Productivity & Management Review, **23** (2), 130-149.

Ramprogus, V. (2002) Eliciting nurse knowledge from practice: The dualism of nursing. Nurse Researcher, **10** (1), 52-64.

Rebentisch, E. & Ferretti, M. (1995) A knowledge asset-based view of technology transfer in international joint ventures. Journal of Engineering and Technological Management, **12**, 1-25.

Renshaw, P. (1998) Sociocultural pedagogy for new times: Reframing key concepts. Australian Educational Researcher, **25** (3), 83-100.

Richardson, B. (1995) Learning contexts and roles for the learning organization leader. The Learning Organization, **2** (1), 15-33.

Richardson, B. (2001) Professionalisation and professional craft knowledge. In Practice Knowledge & Expertise in the Health Professions. (eds J. Higgs & A. Titchen), pp. 42-46. Melbourne: Butterworth-Heinemann.

Richardson, L. (1994) Writing: A method of inquiry. In Handbook of Qualitative Research. (eds N. Denzin & Y. Lincoln), pp. 345-371. Thousand Oaks, CA: Sage.

Richter, I. (1998) Individual and organisational learning at the executive level: Towards a research agenda. Management Learning, **28** (3), 299-316.

Ridsdale, L. & Hudd, S. (1997) What do patients want and not want to see about themselves on the computer screen - a qualitative study. Scandinavian Journal of Primary Health Care, **15**, 180-183.

Rigano, D. & Edwards, J. (1998) Incorporating reflection into work practice. Management Learning, **29** (4), 431-446.

Riley, R. & Manais, E. (2002) Foucault could have been an operating room nurse. Journal of Advanced Nursing, **39** (4), 316-324.

Riley-Doucet, C. & Wilson, S. (1997) A three-step method of self-reflection using reflective journal writing. Journal of Advanced Nursing, **25** (5), 964-968.

Ritchie, J. (2001) Not everything can be reduced to numbers. In Health Research (ed C. Bergland), pp. 150-173. Melbourne: Oxford University Press.

Robins, K. & Webster, F. (1999) Times of the Technoculture: From the Information Society to the Virtual Life. London: Routledge.

Rochon, P. & Oxman, T. (1997) Editorial: Global theme issue on aging. Psychiatry in Medicine: Biopsychosocial Aspects of Primary Care, **27** (3), 181-182.

Rock, P. (2001) Symbolic interactionism and ethnography. In Handbook of Ethnography (eds P. Atkinson, A. Coffey, S. Delmont, *et al.*), pp. 26-38. London: Sage.

Rogers, E. (1983) Diffusion of Innovations. New York: Free Press.

Ropo, A., Eriksson, P. & Hunt, J. (1997) Reflections on conducting processual research on management and organisations. Scandinavian Journal of Management, **13** (4), 331-335.

Rose, N. (1996) Inventing Ourselves: Psychology, Power and Personhood. Cambridge: Cambridge University Press.

Rose, N. (1999) Powers of Freedom: Reframing Political Thought. Cambridge: Cambridge University Press.

Rose, N. & Miller, P. (1992) Political power beyond the State: Problematics of government. British Journal of Sociology, **43** (2), 173-205.

Rose, P. & Parker, D. (1994) Nursing: An integration of art and science within the experience of the practitioner. Journal of Advanced Nursing, **20**, 1004-1010.

Rousseau, D. (1997) Organisational behavior in the new organisational era. Annual Review of Psychology, **48**, 515-546.

Rousseau, D. & Tijoriwala, S. (1999) What's a good reason to change? Motivated reasoning and social accounts in promoting organisational change. Journal of Applied Psychology, **84** (4), 514-528.

Ruggles, R. (1998) The state of the notion: Knowledge management in practice. California Management Review, **40** (3), 80-89.

Russell, D., Calvey, D. & Banks, M. (2003) Creating new learning communities: Towards effective e-learning production. Journal of Workplace Learning, **15** (1), 34-44.

Ryle, G. (1954) The Concept of Mind. London: Hutchinson.

Sach, P. (1995) Transforming work: Collaboration, learning and design. Communications of the ACM, **38** (9), 36-44.

Sandelowski, M. (1986) The problem of rigour in qualitative research. Advances in Nursing Science, **8**, 27-37.

Sarantakos, S. (1995) Social Research (3rd edn). South Melbourne: MacMillian Education Australia Pty Ltd.

Sarbaugh-Thompson, M. (1998) Change from below: Integrating bottom-up entrepreneurship into a program development framework. American Review of Public Administration, **28** (1), 3-25.

Savage, J. (2000) Participative observation: Standing in the shoes of others? Qualitative Health Research, **10** (3), 324-339.

Sally, G. & Donaldson, L. (1998) Clinical governance and the drive for quality improvement in the new NHS in England. British Medical Journal, **317**, 61-65.

Schein, E. (1971) The individual, the organisation and the career: A conceptual scheme. Journal of Applied Behaviour, **7**, 401-426.

Schein, E. (1996a) Culture: The missing concept in organisational studies. Administrative Science Quarterly, **41** (2), 229-240.

Schein, E. (1996b) Three cultures of management: The key to organisational learning. Sloan Management Review, **38** (1), 9-20.

Schon, D. (1983) The Reflective Practitioner: How Professionals Think in Action. New York: Basic Books.

Schudson, M. (1990) Ronald Regan misremembered. In Collective Remembering. (eds D. Middleton & D. Edwards), pp. 108-119. London: Sage.

Schultze, B. (1991) A Tapestry of Service: The Evolution of Nursing in Australia. Melbourne: Churchill Livingstone.

Schultze, U. (2000) A confessional account of an ethnography about knowledge work. MIS Quarterly, **24** (1), 3-41.

Schwandt, T. (1994) Constructivist, interpretivist approaches to human inquiry. In Handbook of Qualitative Research (eds N. Denzin & Y. Lincoln), pp. 118-137. London: Sage.

Schwartzman, H. (1993) Ethnography in Organisations. Newbury Park: Sage.

Schweikhart, S. & Smith-Daniels, V. (1996) Reengineering the work of caregivers: Role redefinition, team structures and organisational redesign. Hospital & Health Services Administration, **41** (1), 19-36.

- Senge, P. (1990) The Fifth Discipline: The Art and Practice of the Learning Organisation. New York: Currency Doubleday.
- Senge, P., Kleiner, A., Roberts, C., Ross, G. & Smith, B. (1994) The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organisation. New York: Currency Doubleday.
- Seufert, A., von Krogh, G. & Bach, A. (1999) Towards knowledge networking. Journal of Knowledge Management, **3** (3), 180-190.
- Sewell, G. (1998) The discipline of teams: The control of team-based industrial work through electronic surveillance. Administrative Science Quarterly, **43** (2), 397-429.
- Shaffir, W. (1999) Doing ethnography. Journal of Contemporary Ethnography, **28** (6), 676-686.
- Shariq, S. (1998) Sense making and artifacts: An exploration into the role of tools in knowledge management. Journal of Knowledge Management, **2** (2), 10-19.
- Shariq, S. (1999) How does knowledge transform as it is transferred? Speculations in the possibility of a cognitive theory of knowledgescapes. Journal of Knowledge Management, **3** (4), 243-251.
- Sheard, A. & Kakabadse, A. (2000) From loose groups to effective teams: The nine key factors of the team landscape. Journal of Management Development, **21** (2), 133-151.
- Sheldon, T. (2001) It ain't what you do but the way you do it. Journal of Health Services Research and Policy, **6** (1), 3-5.
- Shortell, S. (1999) The emergence of qualitative methods in health services research. Health Services Research, **34** (5), 1083-1090.
- Shumway, D. (1989) Michel Foucault. Boston: Twayne Publishers.
- Silver, E., Stein, R. & Bauman, L. (1999) Sociodemographic and condition-related characteristics associated with conduct problems in school-aged children with chronic health conditions. Archives of Pediatrics and Adolescent Medicine, **153**, 815-820.
- Silverman, D. (1987) Communication and Medical Practice. London: Sage.
- Silvester, J., Anderson, N. & Patterson, F. (1999) Organisational culture change: An inter-group attributional analysis. Journal of Occupational and Organisational Psychology, **72**, 1-23.

Simon, H. (1991) Bounded rationality and organisational learning. Organisational Science, **2** (1), 125-133.

Sinclair, J. (1994) Reacting to what? Journal of Organisational Change Management, **7** (5), 32-40.

Singh, V., Bains, D. & Vinnicombe, S. (2002) Informal mentoring as an organisational resource. Long Range Planning, **39**, 389-409.

Slack, T. & Hinings, B. (1994) Institutional pressures and isomorphic change: An empirical test. Organisation Studies, **15** (6), 803-827.

Slappendel, C. (1996) Perspectives on innovation in organisations. Organisation Studies, **17** (1), 107-129.

Smith, D. & Alexander, R. (1988) Fumbling the Future: How Xerox Invented, Then Ignored, the First Personal Computer. New York: Morrow.

Smith, J. & Deemer, D. (2000) The problem of criteria in the age of relativism. In Handbook of Qualitative Research. (eds N. Denzin & Y. Lincoln), Vol. 2, pp. 877-896. Thousand Oaks, CA: Sage.

Smith, K., Carroll, S. & Ashford, S. (1995) Intra- and interorganisational cooperation: Toward a research agenda. Academy of Management Journal, **38** (1), 7-23.

Smith, R. & Farquhar, A. (2000) The road ahead for knowledge management. AI Magazine, **21** (4), 17-40.

Snowded, D. (1999) Liberating knowledge: Understanding the sense making communities in the complex ecologies of the modern organisation. In CBI Guide to Knowledge Management. (ed D. Snowded), pp. 2-11. London: Caspian Publishing.

Sofaer, S. (1999) Qualitative methods: What are they and why use them? Health Services Research, **34** (5), 1101-1118.

Sorensen, C. & Lundh-Snis, U. (2001) Innovation through knowledge codification. Journal of Information Technology, **16**, 83-97.

Sorge, A. (1989) An essay on technical change: Its dimensions and social and strategic context. Organisation Studies, **10** (1), 23-44.

Speice, J., Laneri, H., Kennedy, R. & Engerman, J. (1999) In times of transition: An organisation change from a family systems perspective. Health Care Management Review, **24** (1), 73-80.

Spence, C., Cantrell, J., Christie, I. & Samet, W. (2002) A collaborative approach to the implementation of clinical supervision. Journal of Nursing Management, **10**, 65-74.

Spencer, J. (2001) Ethnography after postmodernism. In Handbook of Ethnography. (eds P. Atkinson, A. Coffey, S. Delmont, *et al.*), pp. 441-452. London: Sage.

Spender, J. (1996) Organisational knowledge, learning and memory: Three concepts in search of a theory. Journal of Organisational Change Management, **9** (1), 63-78.

Spradley, J. (1979) The Ethnographic Interview. London: Holt, Rinehart and Winston.

Spradley, J. (1980) Participant Observation. New York: Holt, Rinehart and Winston.

Squire, K. & Johnson, C. (2000) Supporting distributed communities of practice with interactive television. Educational Technology Research and Development, **48** (1), 23-43.

Star, S. (1989) The Structure of Ill-structured Solutions: Boundary Objects and Heterogeneous Distributed Problem Solving. Irvine: Department of Information and Computer Science, University of California.

Stenmark, D. (2000) Leveraging tacit organisational knowledge. Journal of Management Information Systems, **17** (3), 9-24.

Street, A. (1997) Thinking about nursing futures. Nursing Inquiry, **4** (2), 79.

Styhre, A. (2003) Knowledge management beyond codification: Knowing as practice/concept. Journal of Knowledge Management, **7** (5), 32-40.

Suchman, L. (1987) Plans and Situated Actions: The Problem of Human-Machine Communication. Sydney: Cambridge University Press.

Suchman, L. (1995) Making work visible. Communications of the ACM, **38** (9), 56-64.

Sullivan Palincsar, A., Magnusson, S., Marano, N., Ford, D. & Brown, N. (1998) Designing a community of practice: Principles and practices of the GIsML community. Teaching and Teacher Education, **14** (1), 5-19.

Suominen, T., Kovasin, M. & Ketola, O. (1997) Nursing culture - some viewpoints. Journal of Advanced Nursing, **25** (1), 186-190.

- Sutton, B. (1993) The rationale for qualitative research: A review of principles and theoretical foundations. Library Quarterly, **63** (4), 411-430.
- Sveiby, K. (1996) Transfer of knowledge and the information processing professions. European Management Journal, **14** (4), 379-388.
- Swan, J., Newell, S. & Robertson, M. (1999b) Central agencies in the diffusion and design of technology: A comparison of the UK and Sweden. Organisation Studies, **20** (6), 905-931.
- Swan, J., Newell, S., Scarbrough, H. & Hislop, D. (1999a) Knowledge management and innovation: Networks and networking. Journal of Knowledge Management, **3** (3), 262-275.
- Swanson, J. (1986) The formal qualitative interview for grounded theory. In From Practice to Grounded Theory: Qualitative Research in Nursing. (eds W. Chenitz & J. Swanson), pp. 66-78. Sydney: Addison-Wesley Publishing Company.
- SWSAHS (1999) An Introduction to Performance Management in SWSAHS. Sydney: SWSAHS.
- SWSAHS (1999-2000) Maternal and Infant Network Report. Sydney: SWSAHS.
- SWSAHS (1999b) Maternal and Infant Network (MINET): An integrated Approach to Service Delivery, Evaluation and Research (Discussion Paper). Sydney: SWSAHS.
- SWSAHS (1999c) MINET Report 1999. Sydney: SWSAHS: The Simpson Centre for Health Service Innovation, Liverpool Hospital.
- SWSAHS (2002) Crying/ Sleep and Settling Policy. Sydney: SWSAHS.
- SWSAHS (2002) Families First Overview. Sydney: SWSAHS.
- SWSAHS (2002) IBIS V4.01 User Manual. Sydney: SWSAHS.
- Szulanski, G. (1996) Exploring internal stickiness: Impediments to the transfer of best practice within the firm. Strategic Management, **17** (Winter Special Issue), 27-43.
- Taussig, M. (1993) Mimesis and Alterity: A Particular History of the Senses. New York: Routledge.
- Tedlock, B. (2000) Ethnography and ethnographic representation. In Handbook of Qualitative Research. (eds N. Denzin & Y. Lincoln), Vol. 2, pp. 455-486. Thousand Oaks, CA: Sage.

Tellioglu, H. & Wagner, I. (2001) Work practice surrounding PACS: The politics of space in hospitals. Computer Supported Cooperative Work, **10**, 163-188.

Thompson, P., Warhurst, C. & Callaghan, G. (2001) Ignorant theory and knowledgeable workers: Interrogating the connections between knowledge, skills and services. Journal of Management Studies, **38** (7), 923-942.

Timmermans, S. & Berg, M. (2003) The Gold Standard: The Challenge of Evidence-Based Medicine and Standardisation in Health Care. Philadelphia: Temple University Press.

Timmermans, S., Bowker, G. & Star, S. (1998) The architecture of difference: Visibility, control and compatibility in building a nursing interventions classification. In Differences in Medicine: Unravelling Practices, Techniques, and Bodies. (eds M. Berg & A. Mol), pp. 202-225. Durham and London: Duke University Press.

Titchen, A. (2001) Skilled companionship in professional practice. In Practice Knowledge & Expertise in the Health Professions. (eds J. Higgs & A. Titchen), pp. 69-79. Melbourne: Butterworth-Heinemann.

Titchen, A. & Ersser, S. (2001a) The nature of professional craft knowledge. In Practice Knowledge & Expertise in the Health Professions. (eds J. Higgs & A. Titchen), pp. 35-41. Melbourne: Butterworth-Heinemann.

Titchen, A. & Ersser, S. (2001b) Explicating, creating and validating professional craft knowledge. In Practice Knowledge & Expertise in the Health Professions. (eds J. Higgs & A. Titchen), pp. 48-56. Melbourne: Butterworth-Heinemann.

Todd, G. & Freshwater, D. (1999) Reflective practice and guided discovery: Clinical supervision. British Journal of Nursing, **8**, 1383-1389.

Toulmin, S. (1972) Human Understanding: The Collective Use and Evolution of Concepts. Princeton, NJ: Princeton University Press.

Trahair, R. (1981) The workers' judgment and informal organisation. In Australian Organisational Behaviour. (eds W. Ainsworth & S. Willis), pp. 60-74. Melbourne: Macmillan.

Travers, M. (2001) Qualitative Research Through Case Studies. London: Sage.

Tsoukas, H. & Vladimirou, E. (2001) What is organisational knowledge? Journal of Management Studies, **38** (7), 973-993.

- Tuomi, I. (2000) Data is more than knowledge: Implications of the reversed knowledge hierarchy for knowledge management and organisational memory. Journal of Management Information Systems, **16** (3), 103-117.
- Tushman, M. & Romanelli, E. (1994) Organisation transformation as punctuated equilibrium: An empirical test. Academy of Management Journal, **34**, 1141-1166.
- Tyre, M. & Orlikowski, W. (1994) Windows of opportunity: Temporal patterns of technological adaption in organisations. Organisation Science, **5**, 98-118.
- Tyre, M. & von Hippel, E. (1997) The situated nature of adaptive learning in organisations. Organisation Science, **8** (1), 71-83.
- Van Beveren, J. (2003) Does health care for knowledge management? Journal of Knowledge Management, **7** (1), 90-95.
- van Geert, P. (1994) Dynamic Systems of Development: Change between Complexity and Chaos. Hemel Hempstead: Harvester Wheatsheaf.
- Van Maanen, J. (1988) Tales of the Field: On Writing Ethnography. Chicago: University of Chicago Press.
- Van Maanen, J. & Barley, S. (1984) Occupational communities: Culture in organisations. In Research in Organisational Behaviour. (eds B. Staw & L. Cummings), pp. 287-365. Greenwich, CT: JAI Press.
- Vehvilainen-Julkunen, K. (1994) The function of home visits in maternal and child welfare as evaluated by service providers and users. Journal of Advanced Nursing, **20**, 672-678.
- Vidich, A. & Lyman, S. (2000) Qualitative methods: The history in sociology and anthropology. In Handbook of Qualitative Research. (eds N. Denzin & Y. Lincoln), pp. 37-84. Thousand Oaks, CA: Sage.
- von Cranach, M. (1992) The multi-level organisation of knowledge and action - An integration of complexity. In Social Representations and the Social Bases of Knowledge. (eds M. von Cranach, W. Doise & G. Mugny), pp. 10-22. Lewiston, NY: Hogrefe & Huber Publications.
- von Krogh, G. (1998) Care in knowledge creation. California Management Review, **40** (3), 133-153.
- von Krogh, G. (2002) The communal resource and information systems. Journal of Strategic Information Systems, **11** (2), 85-107.

- von Krogh, G., Ichijo, K. & Nonaka, I. (2000) Enabling Knowledge Creation. Melbourne: Oxford University Press.
- von Krogh, G., Nonaka, I. & Ichijo, K. (1997) Develop knowledge activists! European Management Journal, **15** (5), 475-483.
- Vygotsky, L. (1986) Thought and Language. Cambridge, Mass.: MIT Press.
- Wainwright, D. (1997) Can sociological research be qualitative, critical and valid? The Qualitative Report, **3** (2).
- Warren, R. (1996) Business as a community of purpose. Business Ethics: A European Review, **5** (2), 87-96.
- Wasko, M. & Faraj, S. (2000) "It is what one does": Why people participate and help others in electronic communities of practice. Journal of Strategic Information Systems, **9** (2/3), 155-173.
- Watson, R. (1997) Wittgenstein on language: Toward a theory (and the study) of language in organisations. Journal of Management History, **3** (4), 360-374.
- Weick, K. (1995) Sense Making in Organisations. Thousand Oaks, CA: Sage.
- Weick, K. (1999) That's moving: Theories that matter. Journal of Management Inquiry, **8** (2), 134-142.
- Weingart, L. (1992) Impact of group goals, task component complexity, effort and planning on group performance. Journal of Applied Psychology, **77**, 682-693.
- Weldon, E. (2000) The development of product and process improvements in work groups. Group & Organisation Management, **25** (3), 244-268.
- Wenger, E. (1998a) Communities of Practice: Learning, Meaning and Identity. Cambridge: Cambridge University Press.
- Wenger, E. (1998b) Communities of practice: Learning as a social system: <http://www.co-l-l.com/coil/knowledge-garden/cop/lss.shtml>.
- Wenger, E., McDermott, R. & Snyder, W. (2002) Cultivating Communities of Practice. Boston, Massachusetts: Harvard Business School Press.
- Wenger, E. & Snyder, W. (2000) Communities of practice: The organisational frontier. Harvard Business Review (Jan-Feb), 139-146.
- Wenstein, D. & Weinstein, M. (1998) Is postmodern organisation theory sceptical? Journal of Management History, **4** (4), 350-362.

Werner, O. & Schoepfle, G. (1987) Systemic Fieldwork: Foundations of Ethnography and Interviewing. Newbury Park, CA: Sage.

West, M. (1990) The social psychology of innovation in groups. In Innovation and Creativity at Work: Psychological and Organisational Strategies. (eds M. West & J. Farr), pp. 309-333. Brisbane: John Wiley and Sons.

West, M. & Wallace, M. (1991) Innovation in health care teams. European Journal of Social Psychology, **21**, 303-315.

Wheeler, J. (1969) On Records Files and Dossiers in American Life. New York: Russell Sage Foundation.

Whyte, W. (1955) Street Corner Society: The Social Structure of an Italian Slum. Chicago: Chicago University Press.

Williams, A. (1993) Diversity and agreement in feminist ethnography. Sociology, **27**, 575-589.

Wilson, D. (1992) A Strategy of Change: Concepts and Controversies in the Management of Change. Chichester: Wiley.

Wilson, H. (2001) Power and partnership: A critical analysis of the surveillance discourses of child health nurses. Journal of Advanced Nursing, **36** (2), 294-301.

Winch, S., Creedy, D. & Chaboyer, W. (2002) Governing nursing conduct: The rise of evidence-based practice. Nursing Inquiry, **9** (3), 156-161.

Wise, L. (1999) The use of innovative practices in the public and private sectors: The role of organisational and individual factors. Public Productivity & Management Review, **23** (2), 150-168.

Woicheshyn, J. (1997) Literary analysis as a metaphor in processual research: A story of technological change. Scandinavian Journal of Management, **13**, 457-471.

Wolcott, H. (1990) On seeking - and rejecting - validity in qualitative research. In Qualitative Inquiry in Education: The Continuing Debate. (eds E. Einser & A. Peshkin), pp. 121-152. New York: Columbia University, Teachers College Press.

Wolcott, H. (1994) Transforming Qualitative Data: Description, Analysis and Interpretation. Thousand Oaks, CA: Sage.

Worren, N., Ruddle, K. & Moore, K. (1999) From organisational development to change management. The Journal of Applied Behavioural Science, **35** (3), 273-286.

Yin, R. (1994) Case Study Research: Design and Methods. Thousand Oaks, California: Sage.

Yoxen, E. (1987) Seeing with sound: A study of the development of medical images. In The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology. (eds W. Bijker, T. Hughes & T. Pinch), pp. 281-303. London: MIT Press.

Zajac, G. & Bruhn, J. (1999) The moral context of participation in planned organisational change and learning. Administration & Society, **30** (6), 706-733.

Zaltman, G., Duncan, R. & Holbek, J. (1973) Innovations and Organisations. New York: Wiley.

Zuboff, S. (1988) In the Age of the Smart Machine: The Future of Work and Power. New York: Basic Books.

Abbreviations used in the thesis

Abbreviation	Description
SWSAHS / AHS	South Western Sydney Area Health Service
CFHNT	Child and Family Health Nursing Team
IBIS	Ingleburn Baby Information System
HORT	Health Outcomes Resource Team
MINET	Mother and Infant Network
NSW	New South Wales
CCGRH	Centre for Clinical Governance Research in Health
NUM	Nurse Unit Manager
ECN	Early childhood nurse
CNS	Clinical nurse specialist
EPDS	Edinburgh Postnatal Depression Scale
