In at the Deep End:

The Culture of Nursing Research in a Paediatric Ward

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Statement on the contribution of others

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Abstract

This doctoral thesis reports a critical ethnographic study conducted in the Children's Ward of a regional Australian hospital. The study explored the factors affecting the responses of nurses to the expectation that they would conduct research, and utilise research findings in their clinical practice. It identifies a multitude of facilitative and inhibiting factors affecting their responses, including conceptual, attitudinal and practical factors manifested at personal, local, institutional and broader socio-cultural levels. The critical qualitative methodology of Carspecken was used to structure the conceptualisation and conduct of the research, and a critical Habermasian standpoint was taken when interpreting the findings. Subsequent to an extensive literature review, data was gathered from a wide range of sources, including: non-participant observation; interviews; local documentation; policy statements and directives at ward, institutional and state level; participation in ward-based working groups and the video- and audio-recordings of those meetings. The data suggested that almost all the nurses adopted a worldview in which science is considered authoritative and has legitimacy in all aspects of life, and conceived research as a justifiable expression of this authority. An alternative discourse threaded its way through the ward, in which science was seen as having only partial relevance or legitimacy and a need for other considerations was expressed. This gave rise to a conflict which was also manifested in the nurses' self-understandings and social identities. Conflicting assumptions and demands were associated with the nurses' various professional and personal roles. Strategies that the nurses employed to manage the tensions that arose from these conflicts were identified and their influence on the likelihood of developing research-mindedness and successful participation in research were

considered. Arising from this analysis, recommendations are made which offer a constructive path forward and which should enhance the future of the conduct and implementation of research in the ward and in the wider context of the hospital.

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Preface: My research and I

P.1 Chapter introduction

The purpose of this Preface chapter is to set the scene for the study that unfolds through this thesis. This research is 'nursing research about nursing research'. At least, that was my initial, and a little standardised, response to the question, "What is your research about?" The Preface begins with a description of my personal background of relevance to the selection of the research topic and the selection of a critical theory methodology; a small amount of literature is introduced to support these choices. Relationships between the research topic and my work role, and some of my initial questions of interest are then described. The Preface concludes with a statement of the purpose of the study.

P.2 Personal experience that informs the study

Although I have long aspired to pursue doctoral studies, the decision to undertake this specific study arose shortly after commencing a new job, as the Nurse Manager–Research for a health service district in regional Queensland, in February 2002, and the topic was shaped by the specifics of this job. The notes I made when accepting the appointment refer to the strategic nature of this position within the Nursing Service, with its stated goal of changing the nursing culture towards one in which nurses embraced nursing research; a culture in which nurses would actively engage with nursing research by planning and conducting nursing research, and implementing evidence into daily practice. I was to assist nurses to:

- Challenge ritualistic work practices
- Use research to change outmoded practices
- Appreciate the benefits of nursing research to their work, and
- Embrace nursing research with a passion!

This position was an opportunity for me to combine all that had come before in my nursing career, with its clinical, education, research, administration, and quality management perspectives and experiences.

After deciding to undertake this doctoral research, discussions with Supervisory staff naturally ensued, and I was guided to consider critical ethnography as an appropriate methodology to pursue my research goals and further refine my research topic. I began to read literature that was 'new' to me, and to re-read literature in a new way. Some of my early readings about critical ethnography, and exploring cultural practices in nursing, were texts by Thomas (1993), Carspecken (1996), Whyte (1943), Willis (1977) and Street (Street, 1990, 1992a, 1992b, 1995). These and similar readings certainly piqued my interest in the critical approach, although I had misgivings as to whether or not I could be 'critical'. As I read about critical theory, which would be used as the theoretical framework underpinning this particular research, I learnt that I would be challenging the status quo, and that routine practices are socially and historically constructed. As Street says, "cultural practices in nursing are not found in a vacuum" (1992a, p4). Critical social research is also reflective, and for these reasons it is appropriate for me to present some reflections about myself, as a nurse, person and student researcher at the outset to this study.

My nursing career has not followed a traditional trajectory, if in fact there is such a thing. I began nursing as a 'holiday job' at the completion of my secondary schooling, believing that I had a considerable understanding of what a nurse's work entailed, because my mother was a Registered Nurse. Indeed, I had lived for three of my school years in three different convalescent hospitals of which my mother had been the Matron, to use the nomenclature of the time. Yet it was still a shock when I put on the nurses' uniform, which consisted of a blue dress complete with buttons on shanks, a cap with one stripe on it that indicated 'first year nurse', stockings and brown shoes, on my first day on the job in November 1972. It was as though the donning of a uniform and a quick lesson on how to make a bed transformed me into a nurse. My sense of responsibility went into overdrive.

The subsequent decision to pursue nursing as a career, in contrast to seeing it as purely a temporary job to earn some money, came 'out of the blue' to everyone in my life up to that point in time; indeed, it was a surprise to me. I had been expected to continue my education at a tertiary level in a science field and had considered the myriad of options available to me. Disappointingly to me at the time, the promised cadetship toward a Bachelor of Chemical Engineering did not eventuate because the firm decided that year not to support females at that level of education. This was not an unusual situation, some 35 years ago. A pivotal factor in my decision to continue with nursing at the end of the vacation period was the influence of a few nurses I had worked with during those first three months at the local hospital, who foreshadowed considerable changes to the profession and led me to envision a positive future for nursing. Those key nurses were my role models in many ways, and I can identify

their continuing influence in my later career directions and life away from work. One Registered Nurse, who I met on my first ward, encouraged me never to leave work without having learnt something new that shift, and I never end a day without reflecting on what I have learnt either in a work or non-work context. I was unaware, then, that this reflexivity inherent in my nursing practice would also be an integral part of the methodology chosen for my doctoral research.

Despite the decision to pursue my nurse training, I was not content to relinquish my interests in tertiary studies completely and I wanted to use the Commonwealth University Scholarship that I felt I had earned. A degree could be an insurance policy should I change my mind about nursing, so I embarked on a part-time Bachelor of Arts, concurrent with my general nursing certificate. My 'days off' were spent in a world so completely different to that of a busy hospital; my rostering needs were certainly a challenge for the Nursing Supervisors. Necessarily, I was rostered off during the week so that I could attend day classes at the university, or I had specific shift requests to enable me to attend evening lectures. The knowledge and skills that I was gaining in each world were vastly different, as were the educational standards and expected ways of learning. I straddled the worlds of a student nurse and a university student, uncertain whether I fully fitted the mould of either. My friends and acquaintances in each of these worlds did not understand the other world; most of my school friends did not understand my choices at all! Perhaps it was at this stage that I subconsciously started to think about different 'cultures' and 'cultural practices'. I was participating in vastly different cultures at work, at university, and in my private life. I certainly did not anticipate that those

introductory anthropology and psychology lectures would resurface during my postgraduate nursing research.

Of course I cannot ignore my upbringing and the role that it has played in my career, and to my ultimate choice of research topic. My parents emphasised a good education and learning in general, the importance of completing things once started, and the importance of hard work. They probably fostered in me a willingness to try new things, and a strong sense of independence, which often mean that I take on new challenges but rarely ask for help. My parents certainly encouraged me to travel and make the most of those experiences that result from living in different places. Above all, my parents always encouraged me to do my best at everything I attempted, whilst retaining a sense of 'fair play'. I have met many people in my work life who do not share these qualities, and my interactions with such people have caused me much frustration. I have never felt at ease around people who, in my mind, settle for second best, or people who ride 'rough shot' over others. That type of behaviour is certainly oppressive. I recognise that I prefer the company of people who openly question practice, and who are prepared to change practices in light of new knowledge. The various positions I have held during my nursing career have, sadly, at times led me into contact with many nurses who do not routinely question their practice, or who have no desire or inclination to seek better ways. There have been occasions when I have decided that it was very important to challenge the status quo, and have instigated actions that led to changes to the previously-accepted routines.

After my general nurse training, I completed my psychiatric nursing certificate; and soon afterwards went to London where I gained a specialty qualification in ophthalmic nursing. I remained at the ophthalmic hospital for another year, was promoted, and it was here that I first had the opportunity of being in charge of a whole hospital on some shifts. My world expanded as my nursing experiences and responsibilities grew in such a short time; my eagerness to learn afforded me greater clinical opportunities. I learnt that there were subtle differences in organisations, management styles, and the expectations both on and of staff. The ophthalmologists appreciated my curiosity, despite my nursing colleagues expressing their surprise that I would even think to question such specialists. Sometimes it was easier to laugh it off and give the excuse that I was Australian, but overall this world-leading hospital was staffed by health professionals who were always eager to learn.

I secured a position as a hospital Nurse Educator shortly after returning to Australia; and I continued to work towards completion of my Bachelor of Arts over the next two years. Several of my Nurse Educator colleagues were also pursuing tertiary qualifications; this was the first time that I was working with nurses who shared similar experiences of university studies. Although nurse training was still at the hospital certificate level, the entry requirements for student nurses at that hospital included the completion of the Higher School Certificate. This was preparatory to the move of all Australian undergraduate nurse education into the tertiary sector, which would have ramifications, many of them possibly not envisaged at that stage, for the academic and clinical nursing sectors.

As a Nurse Educator, I taught both in classrooms and in the allocated clinical areas, and the inter-relationship between theoretical knowledge and practical skills became a core focus of my work. I enjoyed those occasions when I guided nurses to, for example, 'do an eye dressing' for the first time, and they could relate what they had learnt in lectures to their practice. The system was by no means perfect, with clinical practice usually preceding theory. In those instances, a modification to clinical teaching styles was needed. This interest in integrating theory and research with practice was the focus of a short-term Fellowship, through which I studied for six months at a university in the United States of America. Indeed, this interest is ongoing and is reflected in both the topic of this current study and my current work role. While I was overseas, nurse education in New South Wales moved to the tertiary sector, and on returning to my Nurse Educator role, I felt my world shrink and was shocked to realise that many of my hospital colleagues were extremely reticent to hear about different approaches to nurse education and nursing. Perhaps the tertiary sector would be more open to different ways, and would be more receptive to new ideas. Hence, I began employment as a Lecturer and expanded my horizons yet again; learning new material and skills so that I could teach several nursing subjects, working with lecturers from different backgrounds and with different nursing experiences, and finding my way to several hospitals that I had never set foot inside of prior to the students' clinical experience days.

Because most nursing lecturers in the mid-1980s had lower levels of qualifications than lecturers in other disciplines, a reflection of the traditional hospital training system in Australia, nursing lecturers were strongly encouraged to undertake

postgraduate studies. I was able to pursue a developing interest in clinical nursing research by my choice of postgraduate research degree, and by my specific research topic. A move interstate necessitated another change in career focus, with 'quality and accreditation coordinator' being added to my nurse educator role in a private hospital. This was a steep learning curve, but I found myself intensely interested in, and comfortable with, the quality mantra of 'doing the right things right'. I held different positions over the next few years, and completed additional tertiary qualifications, in the field of quality, so that I could perform my job more competently. To work towards the quality concept of continual improvement in a collaborative way necessitates a degree of comfort with change. I accepted, a little begrudgingly at times, that some of my colleagues focused on the barriers to change rather than embracing change. I also discovered that the bureaucratic nature of health facilities represses change and creativity, even though organisational mission and vision statements would indicate otherwise. Through my work in quality, I began to more readily and openly question apparent inequities in the hospital systems, and began to feel increasingly uncomfortable with managements only paying lip-service to their espoused values. Certainly, especially in health facilities which needed to make a profit in the open marketplace, it became clear that decisions were made to privilege the interests of certain individuals or groups over those of others. The question of 'whose interests are being served' needs to be asked throughout a critical ethnography, and my prior work experiences meant that I did not approach my current work role and this current research study with the blind acceptance that everything would be smooth sailing and non-confrontational.

P.3 The Nursing Services and the Nurse Manager–Research position

Nurses told me of the momentous and somewhat tumultuous changes within the nursing services that had occurred barely four months prior to my commencement as the Nurse Manager-Research. The city's two public hospitals, each with their own distinct practices, traditions and staff, had been brought together into one new hospital on a new site, something that had never been done previously in this State. Prior to what is now referred to as 'The Move', position descriptions of all levels of nurses were reviewed so that they reflected the Nursing Services' new vision, structure, and model of nursing care delivery. The accountabilities related to nursing research specific to each level of appointment are articulated within these position descriptions. Responsibilities range from:

- Appreciating the relevance of nursing research
- Using research findings in practice
- Supporting those undertaking nursing research, through to
- Designing and undertaking projects.

A substantial part of the role of the Nurse Manager–Research is to assist all nurses within the health district to fulfil their research accountabilities. In particular, those Registered Nurses classified as 'Clinical Nurses' (also called Level Two Nurses at that time, Nursing Officer Twos now), have been required to undertake action-based nursing research yearly since these position descriptions were introduced in October 2001. Even though the individual Clinical Nurses had agreed that they would undertake research, it quickly became apparent that the nurses did not expect that

their compliance with this single aspect of their position descriptions would be mandatory. After all, no other single aspect of their position descriptions had been, or was being, monitored to this degree. The Nurse Manager–Research position carries certain privileges associated with middle management; it is an extremely interesting position, not least because it brings me into contact with some very talented nurses across the health district. Yet it can be isolating because of its responsibilities, and because it is the only such position with the health service district, and one of only a few within the State.

The idea for this doctoral study grew out of the difficulties that I, as the Nurse Manager–Research, encountered in trying to support the nurses' research endeavours, and from the frustrations expressed by individual nurses attempting to undertake research, within the first year or two after the establishment of the new hospital; and from the difficulties I experienced in developing and administering fair and equitable research management processes. From conversations with the Clinical Nurses, the variation in their levels of enthusiasm and knowledge about nursing research became clear. The quality and depth of the so-called 'action research' projects varied markedly. In many cases it was extremely difficult to identify any research components of these projects. However, we recognised that this was such a steep learning curve for many experienced nurse clinicians, and we accepted all projects where nurses had obviously expended effort. In many cases, those nurses learnt something about themselves and were very excited about having been able to complete a project of relevance to their clinical area. Unfortunately, a disproportionate amount of my time was being consumed in 'chasing up' Clinical

Nurses who did not submit their nursing research by the due date, and I would have preferred to use my time more productively. After all, I too had additional research accountabilities within my own position description.

Different resources were provided to assist nurses with their research. There was an expectation that individual Clinical Nurses would negotiate time off-line to undertake their research projects. As I discovered, this was more likely to be supported or more easily provided in some clinical areas; and many of the Clinical Nurses were not accustomed to initiating these requests with their Nurse Unit Managers. The hospital has on on-site library, where skilled librarians willingly assist all staff to locate relevant literature; however, some nurses told me that they had never visited the library, so I would take them there and show them around the facilities. Additionally, many on-line information resources of relevance to research and clinical practice are directly accessible by all clinicians. Education sessions about research and evidence-based practice are delivered throughout the health service district by various people including myself, librarians, doctors and visiting lecturers. Workshops, journal clubs, 'grand rounds' and on-line education modules are other ways that nurses can gain knowledge about the latest evidence of relevance to their practice. During the course of this study, plans for the joint appointment between the local university and the health service district of a Clinical Chair in Nursing were progressed; this will be another resource to support nurses in their research endeavours.

The conduct and utilisation of nursing research has been more problematic and painful for some nurses, with different hospital areas providing varying levels of support to nursing research. The whole situation did not seem uniformly fair. Many nurses were unperturbed and completed small nursing research projects, others were distressed about the processes for implementing and managing their nursing research responsibilities, and a few managed not to participate. I began to delve into the published literature about ways to encourage clinical nursing research and overcome the factors inhibiting the involvement of nurses with research. It has been reported as being too simplistic to expect nurses to translate research findings into practice without organisational support (Hunt, 1987). I found that, notwithstanding the use of change management principles, active support from senior nursing administration and the provision of some resources, the development of a nursing research culture has been found to be complex, as suggested by MacGuire (1990), and is certainly not attainable in a short period of time. Other researchers have concluded that there is no single model of change that is best for all practice situations, and that often multiple strategies need to be adopted (see, for example, Cutcliffe & Bassett, 1997; Grol, Baker, & Moss, 2002; Munro & Spiby, 2001; Spiby & Munro, 2001). To decree that a desired cultural change will happen, does not guarantee its eventuation, thus there were no quick fixes available to me, despite the expectation of some of the more senior nurses within the health service. Also, it seemed likely that the adoption of a nursing research framework from elsewhere would not address the underlying causes of the difficulties that we were experiencing in this particular hospital.

Nursing Administration, for whom I work, whilst part of the state's public health system, does like to do some things differently. This desire to be unique within the larger bureaucracy contributed to the emphasis placed upon nursing research, their enthusiasm for nursing research, and how they introduced it. No other Queensland hospital had elected to implement the nursing career structure in the same way, by mandating nursing research for a particular level of nurse. If the Clinical Nurses raised this as an argument against undertaking nursing research, the Nursing Services' response was that it was unconcerned with what other hospitals demand of their staff.

P.3.1 Some initial questions

One could ask, perhaps naively, "Why don't nurses just perform their role as described in their position descriptions?" But this has not happened, although several nurses have introduced changes to improve patient care subsequent to completing small research projects. Nurses' work lives are complicated, and nurses face competing interests on every shift that they work. I began to ponder questions such as:

- Why was there a variation in participation in clinical nursing research amongst the Clinical Nurses?
- How did some areas/units manage to make these new demands on nurses 'work'?
- Is it reasonable that some nurses were genuinely upset and aggrieved by the process? How could this distress be minimised?

- How reasonable is it to make one component of a position description mandatory, with definite consequences of not meeting that particular requirement?
- Why did some areas/units more readily access the resources made available to them to assist with nursing research than did other areas/units?
- Was there something special about the dynamics of individual areas/units that took up the offers of assistance and resources to help them in their nursing research endeavours?
- What role do power and politics play within a particular area/unit or group of staff?
- What would fair and equitable processes and expectations be?
- How could clinical nursing research best be encouraged and supported, so that it would not be discarded because it was 'all too hard'?
- Whose interests are being served by demanding that nurses working in very busy clinical situations should undertake research?
- What is a reasonable role for the Nurse Manager–Research in this process?

Whilst it may be a laudable goal, how does Nursing Services' mandated goal to develop a nursing research culture, affect individual nurses? Several nurses had 'stepped down' from their Clinical Nurse positions so that they were no longer obligated to complete an action-based research project. Other nurses relished the opportunities to be actively involved in nursing research, or adopted strategies that made it easier for them. The Nurse Manager–Research position, clearly a pivotal role in contributing to the desired cultural change, is itself subject to competing

interests of the nurse clinicians and nursing administration. How is it possible to move toward this goal with limited resources? How would we know if we had a 'nursing research culture'? Do nurses even have any common understanding of the meanings of 'nursing research' and 'clinical nursing research'? Deep down, despite all the hard work, I wondered what, if anything, would really change, and pondered whose ends were being served and whose voices were not being heard.

P.4 Critical research

As mentioned earlier, in order to research my questions of interest, my Supervisor guided me to read about critical social theory. Critical theory was developed in the 1920s and 1930s by a group of theorists led by Horkheimer at the Frankfurt School of Germany (de Laine, 1997, p124). Some thirty years later it was further developed by other scholars, notably Habermas who "placed his critical social theory within a framework of scientific knowledge and examined the interests served by categories of knowledge" (de Laine, 1997, p125). One of three categories of knowledge described by Habermas was critical social theory, "which is interested in liberating persons from unacknowledged circumstances of domination and transforming constraining conditions" (Stevens, 1989, cited in de Laine, 1997, p125). Habermas emphasised the role of language, and hence communicative action, and spoke of the 'ideal speech situation' (Crotty, 1998, p143). I felt comfortable that the tenets of critical theory, and the selection of a critical ethnography methodology with its foundations in critical theory, suited the exploration of my research topic.

The study was conceived in ways consistent with the theoretical framework of critical theory that links power relationships and communication, and promotes reflection and change. Critical research "questions currently held values and assumptions and challenges conventional social structures" (Gray, 2004, p23). I embarked on the research journey aware that I would be critiquing the status quo, and hopeful that some of the participants would also be facilitated through dialogue to examine the "personal, political, social, cultural, historical, and economic aspects" (Taylor, 1998, p132) in relation to the development of a nursing research culture. I continued working as the Nurse Manager–Research while undertaking the research, so that I could further develop my work role, which was still in its formative stages and was a role that I regarded highly. Yet I foresaw that the research would also involve a critique of this position – I viewed the research topic as one that was integral to the development of the Nurse Manager–Research position, yet separate to it. The best way that I could describe that concept to others was that I would be looking at my role from the sidelines, as I explored the nature of the nursing research culture on a selected ward.

P.5 The purpose of the study

The study took place against this background information about the intent of the nursing services to encourage and support nurses' involvement in nursing research, and a beginning appreciation of the complexity of such a change. A decision was made that it was impossible to undertake an in-depth investigation of the factors associated with the development of a nursing research culture across an entire facility, therefore it was decided to focus on one ward.

The purpose of the study was to critically explore, in detail, issues across all levels of nursing staff associated with the use and/or conduct of nursing research within a selected hospital ward. The study began with the expectations that it would raise the awareness of nursing staff about the issues associated with clinical nursing research. The findings would inform nurses about the status of nursing research in their ward, and enable them to question existing practices that may affect their use of, interest and/or participation in, nursing research.

P.6 Summary of Preface

It is anticipated that the reader has some understanding of the background to the selection of my research topic, and a little sense of who I was in the early stages of my doctoral studies that I commenced as a part-time student in 2003.

- I recognised that my position was 'privileged' with respect to my educational and life experiences up to this point, my work experiences within different roles and health facilities, and my current work role.
- I needed to be alert to positive involvement of my nursing colleagues with nursing research, because my work role at times was considerably focused on those nurses who did not engage with nursing research as was expected of them.
- I began the research with the understanding that my beliefs would be challenged and that I would change through my involvement with the research and participants.
- I was comfortable with the selection of a critical approach to my research. Such an approach can "address the power imbalances in working conditions,

> relationships and organisations, and turn upside down some taken-for-granted assumptions about the way things are, and the way they need to be" (Taylor, 2006, p385).

Chapter One of this thesis provides an overview of the historical and professional context of the study, and Chapter Two focuses on a review of the research literature pertaining to the broad topic of establishing a nursing research culture, increasing nurse clinicians' involvement with research, and strategies that have been used to assist nurse clinicians to engage with nursing research in some way. Subsequent chapters explain in detail the exact methodology, how the study proceeded, and the outcomes of the research.

Chapter 1: The historical, cultural and professional context of the research

1.1 Chapter introduction

The widely accepted expectation that research is an integral part of professional nursing is embodied in statements from professional bodies, tertiary education curricula, industrial awards and agreements, and organisation-specific documents. For example, a Position Statement issued by the Royal College of Nursing Australia, declares "it is essential for the nursing profession to strengthen its research culture and support evidence based nursing practice to enhance the contribution of nursing to the health and well-being of people" (1998). A prerequisite for nursing practice to be informed by evidence is that all nurses are research literate. The importance of nursing research was reinforced in a recent joint position statement issued by two Australian professional nursing bodies, claiming that "evidence based practice is the benchmark of high quality nursing care" (The Australian Nursing Federation and Royal College of Nursing Australia, 2006). Whilst nursing research has traditionally been viewed as the responsibility of nurse academics, nurses working in clinical settings are becoming involved in nursing research. Increasingly, nurse clinicians are expected to plan and conduct their own research projects, or to participate as a member of research teams.

The term *nursing research* is rarely clearly defined; rather it is often described in terms of its usefulness to the profession of nursing and to the people for whom nurses care, or the types of topics deemed appropriate for investigation. One definition is

that given by Polit and Beck as being "systematic inquiry designed to develop knowledge about issues of importance to the nursing profession, including nursing practice, education, administration and informatics" (2004, p3). These authors proceed to define *clinical nursing research* as "research designed to generate knowledge to guide nursing practice and to improve the health and quality of life of nurses' clients" (Polit & Beck, 2004, p3). This definition of clinical nursing research is still very general, largely because of the types of knowledge required by nurses whose areas of clinical practice vary so widely. This definition does not, for example, specifically include or exclude inquiry into education or administration topics as they relate to nursing practice. Furthermore, neither definition excludes research in the basic sciences, such as biological sciences research. Earlier writers emphasised the scientific process of nursing research, and the inductive nature of such research to "test promising hypotheses…to develop, refine, and expand nursing theories" (Schlotfeldt, 1960, p494). In an even earlier article, Bryan (1932) advocated that there was a place for nurses to be involved in research in the pure sciences, applied sciences and in the social sciences.

The meanings of *nursing research* have changed and developed over time, as have the areas of research of interest to nurses, and opinions as to who should conduct this research. Different methodologies have developed, and previous methodologies have been modified and/or refined in response to the needs of researchers. For the purpose of the current study, the term *nursing research* has been used in a broad sense, to refer to inquiry about an area of interest to nurses, generally conducted by nurses. Whilst there is a trend toward multidisciplinary research teams, it is not

considered to be *nursing research,* for the purpose of this current study, if the role of the nurse in such a team does not extend past one of collector of data to further the career of health professionals from other disciplines. These uses of the term *nursing research* reflect the understanding within the hospital where the current study was undertaken. This chapter highlights some milestones associated with changes over time toward the present-day nature of nursing research. The review progressively narrows its focus from the international perspective, to the Australian and Australian state perspectives, to references that pertain to the local region where this doctoral study took place. A review of the research literature about nurse clinicians' engagement with nursing research is to be found in Chapter Two.

1.2 Involving nurses in research - a historical perspective

1.2.1 Historical overview - the International perspective

This history of nursing research is closely intertwined with the history of nursing and, even more specifically, with developments in nursing education. The history of nursing research by necessity includes the history of nurses undertaking research as partial or complete fulfilment of the requirements of their academic awards. The first university nursing course in the United States of America commenced in 1909, but growth in similar programs was slow because it was considered more important to increase the number of nurses and hospital nursing schools (Nieswiadomy, 1998, p13). As nursing education standards improved, nursing education courses began to incorporate research in response to the changing needs of the clinical environment, and a growth in the professional status of nursing. It has been claimed that the

history of nursing research may also reflect the broad development of scientific knowledge and other issues such as gender, power, the nature of nursing and research, professional boundaries, and control over the communication of research (D'Antonio, 1997).

Florence Nightingale is now recognised as an influential person in the development of nursing research and, in particular, nursing research by the nurse clinician. With the benefit of hindsight, many authors claim that Florence Nightingale was the first nurse researcher (see, for example, Polit & Beck, 2004, p5; Roberts & Taylor, 1998, p3). Nightingale outlined responsibilities of all nurses and raised questions that could/should be asked when she wrote *Notes on nursing*, originally published in 1860 (1860/1969). She valued the observational skills of nurses, the need for nurses to have sufficient accurate data, and emphasised the prevention of illness and the promotion of health (Elliott, 2003, p12; McDonald, 2001; Nightingale, 1860/1969).

However, Florence Nightingale's interest in research was not reflected in the initial militaristic nursing education programs in America (Hott & Budin, 1999, p4). Perhaps an early lack of prominence of nursing research was related to the "apprentice nature of nursing" (Polit & Beck, 2004, p5). Hott and Budin (1999) contend that the growth in emphasis and interest in nursing research in the United States of America was associated with improved education for nurses. As initial and higher education for nurses increased, so too did nursing research, with Australia following a similar trend to the United States of America, but some years removed.

One area of nursing education where Australia did set the trend was the transfer of all undergraduate nursing education to universities (Sellers & Deans, 1999, p53).

Nursing research in the United States of America up until the 1950s centred on nursing education and nursing administration. Hott and Budin claimed that "M. Adelaide Nutting's survey of nursing education, published in 1907, was probably the earliest important study in nursing education done by an American nurse" (1999, p6). Nurses were often the subjects of research carried out by non-nurses (Elliott, 2003, p13; Hott & Budin, 1999, p7; Nieswiadomy, 1998, p13; Slater, 1984). Edith S. Bryan was the first American nurse to gain a doctoral degree, in 1927, although her degree was in psychology and counselling (Nieswiadomy, 1998, p15). The University of Pittsburgh offered the first PhD in Nursing in the mid-1950s, whilst some ten years previously the Teachers College – Columbia University and New York Universities offered "the first doctoral programs in nursing education" (Gortner, 1991, p46). There are, however, some examples of American nurses undertaking clinical nursing research in the 1920s and 1930s (Elliott, 2003, p13). Sigma Theta Tau, National Honor Society for Nursing, began to fund nursing research in America in 1936 (Nieswiadomy, 1998, p15).

The 1950s, an important decade for the progression of the nursing research movement in the United States of America (D'Antonio, 1997; Hott & Budin, 1999; Schlotfeldt, 1960), saw the establishment of funding grants and nursing research programs, large-scale research of nursing functions, and the commencement of the journal *Nursing Research* in 1952 (La Perle, 1952). According to this new journal's

Editor, the purposes of *Nursing Research* were twofold: "to inform members of the nursing profession and allied professions of the results of scientific studies in nursing, and to stimulate research in nursing" (Bunge, 1952, p5). Articles in this first issue included a discussion of the meaning of research (Bixler, 1952), an extensive 22-page abstract of an unpublished doctoral thesis that explored four hypotheses about elderly people living with chronic illness (Mack, 1952), and other brief summaries of research studies that reflected the 'scientific' type of research promoted by the journal. One month before the first issue of *Nursing Research*, the *American Journal of Nursing* published the philosophy and plan of action for research in nursing, developed from a meeting of the Joint Committee on Nursing Research and Studies some six months previously. This document articulated the specific responsibilities of the American Nurses' Association with regard to nursing research, which were aligned with its purposes and functions, and it stressed the need for nursing research to be coordinated within and between nursing organisations (Joint Committee on Nursing Research and Studies, 1952, p602).

Nursing research had been well underway prior to the establishment of the Nursing Research Grant Program of the United States' Public Health Service in 1955. Vreeland (1958, p1700) provided some details about three of the six projects that had been funded from general grant funds between 1952 and 1955, one of which would be a published review of the almost 5,000 nursing research projects, inclusive of theses and dissertations, conducted within the preceding fifty years. No further details of those numerous studies were provided by Vreeland before she proceeded to outline the projects that were funded through the first three years of the nursing

research grant program by the Department of which she was Chief. Because it is more usually claimed that nursing research was almost completely focused on education and management topics, it was surprising to read that eleven of the thirty projects that received funding in 1958 were "directly concerned with the nursing care of patients" (Vreeland, 1958, p1701). Although not all the researchers were nurses, and the majority of the grants in the first three years went to universities, Vreeland's account implies that the funding for nursing research and for the training of nurse researchers through this grants program was substantial. Two additional milestones in the history of American nursing research occurred in 1957: the establishment of the "first unit directed primarily toward research in nursing practice...at the Department of Nursing of the Walter Reed Army Institute of Research [and the sponsorship of] a nursing research conference at the University of Colorado" (Nieswiadomy, 1998, p15).

During the next decade, the 1960s, American nursing research began to focus on nursing theories and models (Elliott, 2003, p14) with the growing expression of the need for studies focusing on patient care (Abdellah & Levine, 1966). There were 151 American nurses with doctoral degrees in 1959 (Simmons & Henderson, 1964, cited in Hott & Budin, 1999, p9). Research pertaining to clinical practice undertaken by nurses during doctoral and masters studies increased during the 1960s so that by the time that the journal *Nursing Research* was twenty-five years old, almost half of the published articles described clinical research (Carnegie, 1977, cited in Hott & Budin, 1999, p9).

Opportunities for disseminating nursing research via publications and conferences also grew. The first international research conference by the American Nurses' Association Council of Nurse Researchers was held in 1987, 14 years subsequent to its first national conference (Hott & Budin, 1999, p10). Even earlier, the Division of Nursing, National Institutes of Health, had supported "nine annual American Nurses' Association Research Conferences, the annual western regional research meetings for nurses of the Western Interstate Commission for Higher Education…[in addition to smaller conferences]…dealing with special research topics such as doctoral education, nursing theories, and quality of nursing care" (Gortner, 1973, pp1052-1053). In 1983, Sigma Theta Tau International Honor Society of Nursing held its first international nursing research conference, in Spain. These annual conferences have continued; two nurses from the hospital in this study attended Sigma Theta Tau's Thirteenth International Nursing Research Conference in Brisbane, Australia, in 2002. Similarly, professional nursing bodies in other countries, such as Japan, hold regular national and international nursing research conferences, with Japanese nurses having more than forty Japanese nursing journals through which they can disseminate articles about their research (Davis, Mitoh, & Konishi, 2002, p259).

The National Institute for Nursing Research was established in the United States of America in 1993, a recognition by the parliament of an increased status for nursing research. The United States Congress had recognised the importance of nursing research to scientific knowledge when it established the precursor to the National Institute for Nursing Research, the National Center for Nursing Research, in 1985 (Hott & Budin, 1999, p11). Funding for nursing research in the United States of

America has grown considerably, with the National Institute for Nursing Research having expended a budget of over $130 million in the 2003 fiscal year (as seen on the Web Site of National Institute of Nursing Research). To date, Australia does not have a similar single body that provides direction and associated funding for nursing research, although there are discussions and debate within recent literature about the establishment of such a body (see, for example, Cox, 2004; Mott, 2004; The Australian Nursing Federation and Royal College of Nursing Australia, 2006; Wallis, 2004).

Postgraduate education, specifically at doctoral and post-doctoral level, provides nurses with research skills that will assist them to succeed when competing with researchers from other disciplines for scarce research funds. American graduate nursing programs at the doctoral level had begun to flourish in the 1970s (Elliott, 2003, p15). Many of the 2,000 nurses in the United States of America with masters or doctoral degrees by the end of the 1970s had gained these in non-nursing fields, but the subsequent increase in the number of nurses with postgraduate nursing qualifications reflects nursing's demand for nursing research to underpin practice (Pravikoff, 1993, p33). "In 1990, there were 4300 RNs with doctorates in the United States" (Commonwealth of Australia, 1994, p315). However, notwithstanding the government-mandated National Institute for Nursing Research, and identified priorities for nursing research, the number of American nurses with doctorates and the number of doctorate programs in nursing are viewed as inadequate (Hott & Budin, 1999, p13).

Countries other than the United States of America have also introduced postgraduate nursing research programs. For example, Swedish doctoral programs are a minimum of four years in duration, and require the oral defence of the written thesis and the publication of several peer-reviewed international publications before the degree is awarded (Shields, Kristensson-Hallstrom, Andershed, Jackson, & Eriksson, 2002). In a country with less than half of Australia's population, there were approximately 400 Swedish nurses who had completed their doctoral dissertations in 2002; and "the first doctoral theses in caring/nursing research appeared in 1978" (Shields et al., 2002, p25). This is believed to be much earlier than in Australia, and a few years earlier than in Japan. Nursing research in Japan has also been influenced considerably by improvements in nursing education, with tertiary-level nursing programs progressively introduced from Japan's first four-year bachelors in nursing in 1952, to its first nursing doctoral program in the 1980s. Japan has been upgrading nursing since 1992, building on these educational foundations (Davis et al., 2002, p259). In contrast, Denmark only introduced research methodology courses into basic nurse education programmes in 1999-2000, and masters' level education courses, which build research competency, have been introduced in recent years (Adamsen, Larsen, Bjerregaard, & Madsen, 2003b, p443).

Because nurse lecturers in the United Kingdom are funded differently to academics in other disciplines, their priority is to produce nurses who are competent in a practice setting. Although there is a need to produce the research that underpins practice and education, most nurse lecturers are not funded to undertake this research (see, for example, Closs, 2000; Segrott, McIvor, & Green, 2006). Heavy teaching

workloads, mandatory clinical work, combined with few doctorally-prepared nurse lecturers, further reduce the involvement of United Kingdom nurse lecturers in research. However, in the United Kingdom, "the level of research awareness within both pre- and post-basic nursing courses has mushroomed in the past decade" (Scullion, 2002, p67). Hicks comments that the routine inclusion of research in British pre-registration course curricula as part of *Project 2000* should assist nurses to move away from ritualistic practices toward care that is evidence based, and that more recently-graduated nurses in the United Kingdom should "be able to critically evaluate published research studies and some should also be capable of conducting their own research" (1997, p511).

In Finland, the focus of academic nursing during the 1990s was "on research and theory development" (Vehvilainen-Julkunen, 2000, p218). Because there is a prevailing assumption that nursing practice should reflect a research base, measurement of the outcomes of nursing interventions has become another focus for nursing research; in this way, Finnish nurses can contribute to nursing research in the international arena (Vehvilainen-Julkunen, 2000, p219). However, the discipline of nursing science is much younger in Finland than it is in the United States of America (Oranta, Routasalo, & Hupli, 2002, p210).

Provision of funding to early career nurse researchers has reaped rewards over and above the completion of individual studies. In the first fifty years of the American Nurses Foundation's (ANF) Research Grants Program, from 1955 to 2005, more than 900 nurses were assisted with their research. In turn, Holtzclaw claims that the ANF

and the nursing profession were rewarded due to the subsequent successes of these grant recipients, many of whom progressed to establishing programs of research or gaining "national recognition extending beyond the nursing community" (2006, p20). Funding and research education are not the only means of tailored support for nursing research. For example, the Canadian Nurses' Association published its own *Ethical guidelines for nursing research involving humans,* because of a perceived inadequacy of the International Council of Nurses' Code of Ethics previously published in 1973 (Royal Australian Nursing Federation, 1987, p4).

1.2.2 Historical overview of nursing research in Australia – the Commonwealth and Australian perspective

Contextual issues in nursing have influenced the nature and volume of Australian nursing research. In a reference text about Australian nursing and health care from the perspective of the Commonwealth Government, Wood claimed that "Australian nursing has been struggling with its professional image for a number of years" (1990, p13); and that one of thirty-three essential roles of nurses is to "promote, conduct, and use research relevant to their clinical practice" (1990, p16). Nursing has had varying levels of involvement and recognition in its own right from the Federal perspective, and its representation within the Commonwealth Department of Health grew, from the appointment of the first Nurse Advisor in 1950, to "the establishment of the first Nursing Branch" (Wood, 1990, p81) in 1977 during the term of appointment of the fifth Director-General, 1973-1982. However, the Nursing Branch was part of the Medicine Division. The first *National survey of nursing personnel* was also completed during that time (Wood, 1990, p26). A second Nursing Branch

and several nursing committees were established during the term of the next Director-General of the Department, 1983-1984. Two of the foci of nurses' trade unions at that same time were "the development of a career structure [and] the encouragement and support of nursing research" (Wood, 1990, p197), although it appears that research was concentrated on administrative and educational aspects of nursing; there was no explicit statement about clinical nursing research in this historic account.

The need to improve the level of nurse education diverted resources away from the development of nursing research capacity. The Australian Trained Nurses' Association, with its later publication the *Australian Nurses' Journal,* pre-dated World War One. Issues surrounding nursing education were predominant and were debated over several decades. In 1959, a national nursing education division of the Royal Australian Nursing Federation was formed with an aim of promoting research and critical thinking (Gregory, 1988). In the 1970s, the Royal Australian Nursing Federation's charter broadened:

> to include a consistent effort to encourage research into the concept of nursing science and the means to developing it further, rather than limiting research to matters of curriculum development and training methods which had hitherto been the chief fields of nursing research. (Gregory, 1988, p126)

The eventual transfer of nursing education to the tertiary sector was prompted by several factors, including the increase in scientific knowledge and the haphazard relationship between theory and clinical workload in a hospital-based training system.

The apparent devaluing of nurse education compared to the education of other health professionals, for reasons possibly including gender in a predominantly female occupation, needed addressing. A pilot program, in New South Wales in 1972, during which student nurses attended a technical college for the theoretical component of their nurse training, met with some opposition. Not everyone believed that a technical college education would enhance the status of nursing in the future, nor provide a research base (Dickenson, 1993, p171). Nevertheless, the Royal College of Nursing Australia began the first undergraduate tertiary nurse program in 1974, and the first Australian nursing degree course commenced in 1976 in Western Australia (Hobbs, 1980, p177). The Commonwealth Government agreed, in August 1984, to the total transfer of pre-registration, apprenticeship-style hospital training to the tertiary sector, to be completed by 1993 (Wood, 1990, p214).

This move of nurse education to the tertiary sector began in the mid-1980s, following the earlier pilot programs. By the time that all Australian States had moved nurse training out of hospitals in the early 1990s, there had been significant changes within the tertiary sector itself. The Colleges of Advanced Education amalgamated with Universities; and curricula and academic awards also changed over time. For example, at some Colleges of Advanced Education the initial qualification was a Diploma of Nursing, without the inclusion of formal research subjects. Registered Nurse education has now progressed to an undergraduate degree. Nursing research, now incorporated into undergraduate nursing degrees, was initially introduced at the postgraduate level. This improvement in the standard of the undergraduate qualification has necessitated the development of research course curricula that may

have, in turn, further reduced the time available for nurse academics to conduct their own clinical research. Nurse academics, many of whom were hospital nurse educators in the hospital system, have needed to develop educational programs that meet the needs of the nursing workforce and the many clinical settings, in addition to meeting the research pressures of academia (Clare & Hawes, 2001; McCoppin & Gardner, 1994, p304; Segrott et al., 2006; Wright, Davies, & Francis, 1995).

Roberts and Taylor (1998, p3) claim that nursing research in Australia lags twenty years behind that in the United States of America, because of the delay in moving nursing education into the tertiary sector, and Australian nurse researchers claim that "nursing research in Australia is still in its infancy" (Holzhauser, Cooke, Winch, Finucane, & Davis, 2008, p36). This transfer of education to the tertiary sector, completed over fifteen years ago, has not necessarily increased the amount of nursing research conducted by nurses working in hospitals and the community. Many nurse clinicians are updating and extending their initial qualifications, to address the lack of formal research education in their hospital training (Gething & Leelarthaepin, 2000). Although they brought with them considerable experience and expertise, many nurses who took up positions in academia initially did so with lower academic credentials than lecturers in the well-established tertiary disciplines (Wright et al., 1995). For example, it is reported that in 1991, only 22 per cent of the La Trobe University Faculty of Health Sciences "had a PhD compared to 73 per cent of the University as a whole" (La Trobe University Faculty of Health Sciences, 1993, cited in Commonwealth of Australia, 1994, p322). In a survey of approximately half of

Australia's nurse academics in 1993, only seven per cent (54) of those respondents had a doctoral qualification (Commonwealth of Australia, 1994, p316).

In the foreward to the first Australian-authored text on nursing research, Pearson claims that the acceptance of the need for practice to be based on research evidence has resulted in a "burgeoning of research training and activity in nursing" (1998, pv). The move from a hospital apprenticeship-style of nurse training to a tertiary education style further increased the focus on nursing research. Indeed, nurse academics working in Australian universities clearly articulated their preference for nursing practice to be more guided by nursing research although they expressed less confidence in their prediction for this becoming a reality (Sellers & Deans, 1999).

The establishment of a national nursing research centre is considered another important challenge for Australian nursing (Wood, 1990, p233). Whilst there are many important areas on which nursing research should focus, it remains important that nurses initiate research centred around patient care (The Australian Nursing Federation and Royal College of Nursing Australia, 2006, p2). One focus for the Royal College of Nursing Australia, founded in 1949, remains that of initiating research to find solutions to issues of importance to nursing practice and health (1990, p287). A collaborative project between the Royal College of Nursing Australia, Australian Nursing Federation, Florence Nightingale Committee Australia and the New South Wales College of Nursing, confirmed the crucial role that nursing research plays in the profession of nursing, and developed a national statement about nursing research targets and identified four specific targets:

> TARGET 1: Nursing will be enhanced by the articulation of nursing knowledge and practice through nursing research.
>
> TARGET 2: Nursing research will be fostered as a valid and valued professional activity of benefit to the health and well being of the community.
>
> TARGET 3: Resources for nursing research will be expanded and developed.
>
> TARGET 4: Expertise for high quality nursing research, and its use and application, will be expanded and developed through education and experience. (Nursing Targets National Committee, 1992, pv-vi)

Although national standards for nursing research were being developed towards the end of the twentieth century (Roberts & Taylor, 1998, p5), these have still not eventuated. However, individual health facilities or nursing groups may have developed their own priorities for nursing research, such as the research undertaken by nurses to identify the research priorities of Australian District Nurses (Annells, DeRoche, Koch, Lewin, & Lucke, 2003).

A nursing committee of the National Health and Medical Research Council was created in 1954 (Wood, 1990, p77), chaired by the principal of the Nursing Division of the Commonwealth Department of Health. The first edition of *The role of the nurse in Australia* was published in 1975 by the nursing section of the Medical Services Branch, for the National Health and Medical Research Council (Wood, 1990, p80); the second edition of this title was published in 1983. Whilst the National Health and Medical Research Council, a source of considerable research

funds, has established priority areas for health research, no research grants are specifically allocated to nursing research.

Increased nursing research activity may have been prompted by opportunities to gain postgraduate qualifications in nursing rather than tertiary qualifications in other fields such as education, administration and psychology, together with the lack of clinical nursing research. The peer-reviewed *Australian Journal of Advanced Nursing*, which commenced in 1983, was seen as an appropriate medium for nurses undertaking nursing studies to disseminate their scholarly findings. However, articles on nursing education were included with publications of nursing research (McConnell & Paech, 1993). The relatively recent phenomenon of the availability of nursing research higher degrees has influenced the clinical research undertaken, and the number of qualified nurse researchers. Lumby reminds us that there was a bias in nursing research towards the experimental method, most likely related to the fact that Australian nurses, as they moved into academia and research, "were nourished in other disciplines, many of which used positivistic methods" (1991, p478). The foci of research conducted by nurses have varied over time. Educational and administrative topics, whilst still of importance, no longer constitute the majority of nursing research, and some Australian nurse researchers assert that nursing research needs to "be directed primarily to the improvement of patient care" (Roberts & Taylor, 1998, p12). But there are several other important areas of nursing research, such as "cultural issues for nurses and patients; the history of nursing; [and] ethical decision making" (The Australian Nursing Federation and Royal College of Nursing Australia, 2006, p2).

Deans, Lea and Geyer comment that:

> increasing awareness of and involvement in research by nurses throughout Australia is evidenced by the increasing number of conferences that advertise themes pertaining to research, the increasing number of research-based articles in the professional press, and the increasing number of nursing students in graduate study programs required to undertake a research project. (1997, p30)

Emden predicted that in the Australian setting, nursing graduates will likely "gain a PhD within five years of graduation, rather than within 15-20 years which appears to have been the general pattern to date" (1998, p32). I doubt that this has come to fruition, given the continuing limited amount of research supervisory capacity within the cohort of nurse academics. Australian nurses can now gain nursing doctoral qualifications in Australia, rather than being forced to go overseas as they had to prior to the 1980s, thus the history of Australian nurses completing nursing research at masters and doctoral level in Australia is quite short. There were only 144 postgraduate nursing research students in 1993; 49 of those students were enrolled in a nursing research PhD, 95 in a Masters by research course (Commonwealth of Australia, 1994, p255). However, the number of nurses pursuing and attaining postgraduate research qualifications has grown. For example, a search undertaken of the University of Melbourne's postgraduate nursing website on 23 April 2004 revealed that there were 26 students undertaking a Masters thesis and 44 students undertaking a PhD, and eleven of the 33 research staff held PhDs.

There were, and likely remain, many barriers for academic nurses with research skills to undertake nursing research and publish their research findings. These barriers are related to heavy teaching workloads, curriculum development priorities, competitive internal nature of many nursing faculties, gender issues, lack of funding, different worth of various forms of disseminating research (Emden, 1998). These barriers are not likely to be any less formidable in the clinical nursing arena, where the added immediacy of patient care will further reduce the likelihood of nurses undertaking research.

Formal publication requires time, skill in scholarly writing, and enduring avenues for publication other than conference presentations. Although the *Australian Nurses' Journal* had published research reports for some time, in 1991 the *Australian Journal of Advanced Nursing* was the sole Australian journal in which nurses could publish their peer-reviewed research findings (Lumby, 1991, p478). In July 1992 the *Australian Journal of Mental Health Nursing* became "a fully refereed publication" (Clinton, 1992, p45); this was the third launch and name change of the journal that had first commenced in 1980 (Martyr, 1999). At that time, this particular publication was the "only [refereed] mental health nursing journal in the world" (Baume, 1992, p44), in addition to being the only Australian nursing journal for a clinical nursing specialty area. Its editor proclaimed the importance of a refereed journal to the "developing research and scholarship of Australian mental health nurses" (Clinton, 1992, p45). There is evidence that nurses are doing clinical nursing research, but they are not disseminating their findings via publications (Johnson, 1996, p4). Issues

associated with disseminating and publishing research findings are discussed within the literature review of Chapter Two.

Other factors have contributed to an increased prominence of nursing research in Australia. The role of a registered nurse, according to registering authorities, includes "a responsibility to examine nursing practice critically. The individual registered nurse should also incorporate the results of personal action research or the research findings of others when carrying out the role" (Russell, 1991, p84). The *National competency standards for the Registered Nurse* includes a competency unit about research, within the domain of critical thinking and analysis (Australian Nursing Council, 2000). A competency related to research was also included in earlier editions of the Australian Nursing Council's competencies. For a relatively short period of time, 1981-1988, the Commonwealth Branch of Nursing produced the *Directory of nursing research in Australia* on a biennial basis. Professional colleges such as the Royal College of Nursing Australia assisted in fostering nursing research, although the Royal College of Nursing Australia no longer publishes its biennial *Directory of nursing research*.

In June 2002, the Australian Government published the findings of a Senate Committee Inquiry into Nursing, which had been prompted by the acute shortage of nurses. The Committee acknowledged that there had been numerous previous inquiries into nursing, but that it was now time for action. The Committee also acknowledged that whilst nurses form the largest group of health care employees, they have been "overlooked" in terms of input into policy development (Senate

Community Affairs References Committee, 2002, pxiii). A few of the total of 85 recommendations emanating from this Inquiry pertained to general research about topics such as nursing skill mix and staff allocations, cost implications of paid study leave for nurses, and the health effects of exposure to a known hazardous substance. The report suggested encouraging and increasing nursing research. The two specific recommendations pertaining to nursing research were:

> Recommendation 42: That the Commonwealth Government, through the National Health and Medical Research Council, increase funding for nursing research as a matter of priority.
>
> Recommendation 43: That the research funding provided by the Department of Education, Science and Training to universities be increased to facilitate additional university-based nursing research. (Senate Community Affairs References Committee, 2002, p109)

Difficulties in establishing comprehensive nursing research programs, mentioned in that report, included the acknowledgement that nursing research often does not fit medicine's traditional model of research, and hence does not attract a similar level of funding. Other factors that are believed to contribute to the lack of funding for nursing research were noted in submissions made to the Inquiry, including the small representation of nurses on the National Health and Medical Research Council's Committees responsible for approving funding applications, and the lack of specific funding programs for nursing research on a national basis (Senate Community Affairs References Committee, 2002, p108). The inequity in funding is highlighted in that only five of the 758 "continuing project grants funded by the NHMRC"

(Senate Community Affairs References Committee, 2002, p108) were for nursing research. These five projects received a total of $283,970 of the total $69.5 million.

1.2.3 History of nursing research – Queensland, Australia

The literature contains many examples of nurses in Queensland undertaking research, dating back a considerable time. For example, when cold bath treatments for typhoid patients were introduced at the Brisbane Hospital in 1887, nurses assisted in the collection of data for the doctor in charge of the fever wards (Gregory, 1988, p26). As early as 1909, the Matron and Medical Superintendent from the Brisbane Hospital collaborated to compare their data about nurse-patient ratios to statistics from hospitals in southern Australian states (Gregory, 1988, p47). Previously, the Melbourne and Alfred Hospitals had accessed "copies of the forms used for compiling statistics at the Brisbane Hospital" (Gregory, 1988, p29). Trained nurses were involved in medical research projects during World War Two (Gregory, 1988, p93). Royal Brisbane Hospital also has a long history of senior nurses collecting data pertaining to nurse training and staffing, with the Matron undertaking surveys across Australian hospitals (Gregory, 1988, pp109-110). Failure rates of student nurses were considerable, and history shows that Brisbane Hospital was thwarted in its attempts to increase the entry level of education as a precursor to improving the standard of nursing education (Gregory, 1988, pp115-116), although Queensland was the last Australian state to completely transfer nursing education to the tertiary sector.

However, Queensland was the first Australian state to introduce a register of trained nurses, in 1912. One reason underpinning the establishment of such a register was

the recognition by the state government "that infant and maternal mortality rates declined when trained midwives were responsible for deliveries" (Gregory, 1988, p49). However, the newly-established Nurses' Registration Board, although separate from the Medical Board, was still to include membership of medical practitioners (Gregory, 1988, p49). Concern over registration of nursing training was greater than the concern about nurses' working conditions. Nursing as a profession was predominantly female, and work conditions and remuneration were seen as insignificant in comparison to the principles of sacrifice and selflessness (Strachan, 1996, p219). Similarly, there was little, if any, mention of nursing research. A sub-committee of the Queensland Branch of the Australian Trained Nurses' Association, concerned with education issues, was formed in 1947 (Strachan, 1996, p220). Continuing nurse education was initially primarily concerned with improving the education of tutor sisters, in an effort to improve the numbers of nurses completing their hospital training. For those additional courses, Queensland nurses attended the College of Nursing Australia, located in Melbourne, Victoria, from 1950.

An Expert Committee was established in 1969:

> To inquire into the present conditions of recruitment and wastage of nurses, nursing education (basic and post-basic), nursing service, including living and working conditions and to inquire as to whether these are satisfactory at present or if in fact improvements are desirable, and to make recommendations to the Council of the Royal Australian Nursing Federation (Queensland Branch). (Royal Australian Nursing Federation, 1971, p2)

Consequently, a significant focus of the report was the inadequacy of nurse training at that time. Very low entrance requirements, an extreme shortage of qualified nurse educators, and variable teaching resources were all believed to contribute to the attrition rate and hinder progress. The authors proposed moving basic nurse training into schools of nursing associated with existing tertiary facilities, but they did not advocate university education for initial nurse training, nor promote advanced clinical education.

> However, nurses who have matriculated and wish to undertake university studies after completion of basic nursing training should be encouraged and assisted to do so, preferably in non-nursing courses, for it is recognised that there is great need for persons with university qualifications in the higher echelons of teaching and administration. (Royal Australian Nursing Federation, 1971, p21)

It was acknowledged that nursing needed to be based on scientific knowledge, and that registered nurses needed to keep up-to-date on a continuing basis with any advancements in this knowledge (Royal Australian Nursing Federation, 1971, p14). It is not surprising that there was no mention of clinical nursing research within the document or its recommendations, given the constituents of this committee, chaired by a University Dean of Medicine.

Educational opportunities following original hospital nursing training expanded considerably in the 1970s. In a history of Royal Brisbane Hospital we learn that "Mary Dickenson, the first Australian nurse to be awarded a Doctorate of Philosophy

for a research thesis in the area of nursing studies, trained at the hospital" (Gregory, 1988, p135). There is evidence that Royal Brisbane Hospital acknowledged the importance of research in the nurses' roles by, for example, including responsibilities for nursing education and research within the role of the first Executive Director of Nursing Services appointed at the Royal Brisbane Hospital in 1975 (Gregory, 1988, p133).

The Mater Public Hospitals, Brisbane, employed a nurse researcher in the late 1970s, reflective of the educational mindedness and forward thinking of Nursing Division (Ducat, 1992, p10). Longhurst, in a history of nursing at the Mater Hospitals, noted that in 1992, there was a Nursing Research Department, comprised of an Assistant Director of Nursing, a Nurse Researcher at each of the Mater Adult, Children's and Mothers' Hospitals, and two Clinical Nurse Consultants responsible for infection control. Nurses were said to be "increasingly involved in research programmes aimed at improving patient comfort and well-being" (Longhurst, 1992, p121). The example given referred to a trial of patient-controlled analgesia within Intensive Care in 1989. This commitment to research forms part of the Philosophy of the Mater Public Hospitals' Department of Nursing Services (Longhurst, 1992, p13).

In a historical account of the Royal Women's Hospital, Brisbane, nursing research was mentioned in the context of the profile of Joan Webster, one of the registered midwives. "Since completing the Bachelor of Arts degree with a double major in sociology in 1984, Sister Webster has had a growing interest in nursing research" (Patrick, 1988, p80). A particular area of interest was that of infection control. Joan

Webster currently, 2008, is the Nursing Director of Research and Education at The Royal Brisbane and Women's Hospitals, and as an experienced researcher has been the recipient of several substantial nursing research grants.

Jaumees (2001) presents us with the history of the Townsville General Hospital, over the period 1861-2001, up until the building of a new hospital, The Townsville Hospital, on a new site adjacent to the James Cook University's Townsville campus. This historical account is one seen and written largely through the eyes of medical practitioners, and compiled by Jaumees, a previous Deputy Medical Superintendent of the Hospital. Two nurses who contributed small sections to the second part of the book, the period 1981-2001, were still given the outdated title of "Sister". The photos interspersed throughout were largely of nurses, with a quaint old picture of a nurse at the conclusion of most chapters: the reader may well question whether nurses are to be seen but not heard. Medical practitioners from different times acknowledged the nurses' (Matrons') loyalty, efficiency and hard work. For example the Medical Superintendent during the 1940s wrote that "the nursing staff was the one bright aspect of the shambles that was Townsville Hospital" (Moore, 2001, p49). There is a long history of medical research in Townsville, with Australia's first institute of medical research, the Australian Institute of Tropical Medicine, being established in 1910 by the Commonwealth Government (Jaumees, 2001, p100; Wood, 1990, p21). In 1930 the Institute was incorporated into a new School at the University of Sydney (Wood, 1990, p39).

The Director of the Emergency Department at Townsville General Hospital, referring to the 1990s, noted the advanced skills and education of emergency department nurses (Small, 2001, p186). Associate Professor Trevor Wood, the Director of Medical Services, Townsville General Hospital, 1988-2000, was not so complimentary in his comments about the calibre of nurses' submissions to the Ethics Committee. Townsville Hospital's Ethics Committee was established in the early 1990s and was the first of such in Queensland, prompted by the need for the hospital to progress to a full "research teaching facility" (Wood, 2001, p231). The establishment of an Ethics Committee at Townsville General Hospital was also considered prudent following the Carter Committee of Inquiry into Ward 10B (Wood, 2001, p231)[1]. According to the Director of Medical Services at the time, the recently-opened School of Nursing Sciences began to submit numerous research proposals for consideration by the hospital's ethics committee, undoubtedly increasing the workload of the committee substantially. The fact that the Nursing School was proposing research prompted the ethics committee to develop submission guidelines. One wonders what guidelines were used prior to that time by non-nurse researchers, either internal or external to the hospital. Perhaps the standard of the ethics submissions by nurses and the focus of nursing research projects challenged the Ethics Committee. It is difficult to be convinced by the Medical Superintendent's comments that "the new School of Nursing had little experience in putting forward research proposals to an Ethics Committee" (Wood, 2001, p232).

[1] Ward 10B was the psychiatric ward at Townsville General Hospital, and became the subject of the Inquiry following the deaths of patients and allegations of inappropriate treatment

An increasing interest in nursing research developed at Townsville Hospital during the 1990s, very likely linked to the establishment of the School of Nursing Sciences at James Cook University, Townsville, in 1989, with its initial cohort of undergraduate nursing students commencing in 1990. Research that focused on nursing practice has been valued and promoted within the School of Nursing Sciences (Hayes & Usher, 2001, p242). In 1993, James Cook University was one of only nine Australian universities that had nursing students at PhD level, with one student enrolled at that time (Commonwealth of Australia, 1994, p80). The School of Nursing Sciences was influential in establishing a Nurse Manager–Research position at the hospital in the late 1990s, and research partnerships with the health service continue today.

As nurses began to undertake research they sourced different avenues of funding support for their efforts; the Florence Nightingale Committee (Queensland) was one such source. Due largely to its own fundraising efforts since its inception in 1946, the Committee had been able to provide financial support for continuing education of nurses, and in the early 1980s it began to support nursing research in its vision to foster the future of nursing. Tangible support was initially, in 1984, in the form of an award for performance in a research unit of study at Queensland Institute of Technology. In 1988, the Queensland branch of the Florence Nightingale Committee launched its support for clinical nursing research, in the form of grants for clinical practice research (Longhurst, 2001, p60), and continued to support nursing research into the 1990s; Townsville nurses, from James Cook University's School of Nursing Sciences, have been recipients of these funds. In 1999, owing largely to increased

financial costs, decreased numbers of active committee members, and achievement of its aims, the Queensland branch of the Florence Nightingale Committee decided to discontinue its operations as all other State branches had done some years previously. The final nurse to receive funding for nursing research from the Florence Nightingale Committee (Queensland) in 1999 was Narelle Biedermann, who was undertaking doctoral research through James Cook University, Townsville (Longhurst, 2001, p73). This research has since been completed, and Dr Biedermann remains an adjunct member of staff of the University's School of Nursing Sciences.

The interest and involvement in nursing research at The Townsville Hospital was also linked to the introduction of a new career structure for Queensland Health nurses in the early 1990s. Within the current career structure, nurses at each level have specific research responsibilities, ranging from the valuing and use of research in practice, to the active planning, and conduct of research. Expectations of nurses' involvement in nursing research were incorporated into nurses' position descriptions as they were progressively reviewed, throughout the Townsville Health Service District.

Whilst history shows that there are now more nurses who have nursing research qualifications, it is not known whether they are using their knowledge and skills by undertaking clinical nursing research. There are many factors that inhibit clinical nursing research and the subsequent publication (dissemination) of resultant findings.

Research pertaining to these factors will be explored within the next chapter, Chapter Two. However, it is first necessary to present some background information about the rise of evidence-based practice, specifically evidence-based nursing practice

1.3 Evidence-based (nursing) practice

Despite the claim that nursing research is part of the role of every professional nurse (Bunge, 1968), in the past, many nurse clinicians may have based their practice on the knowledge and skills acquired during their initial training, with little reference to subsequent research findings. Given the improvements in technology, expansion of knowledge networks, and increased demands from patients, relatives and the general community, this reliance on outdated knowledge is no longer regarded as adequate. Pearson, Field and Jordan (2007) claim that there is an expectation that the care provided by all health professionals should lead to the best outcomes for their patients, and that such care should be based on evidence. The expectation that nursing practice is evidence-based is also embodied in position statements issued by professional organisations, such as Sigma Theta Tau International Honor Society of Nursing (2005). This expectation is largely shaped by the status afforded to health professionals, particularly in western societies, and it is consonant with the call for evidence-based practice in professions outside of health within the general community.

More than three decades ago, Dr Archie Cochrane, a British epidemiologist, in a search for the most effective and efficient medical care, proposed that the evidence from randomised controlled trials should be systematically reviewed and synthesised.

His work, from which *The Cochrane Collaboration* developed, prompted the evidence-based medicine movement that is now known more widely as evidence-based practice (Fineout-Overholt, Melnyk, & Schultz, 2005; Pearson et al., 2007; The Cochrane Collaboration, 2005). Contemporary definitions of evidence-based practice have expanded from the initial narrow definitions, which conveyed that the results from rigorously conducted research, preferably randomised controlled trials, provided the evidence that was to be translated into practice. A more contemporaneous description of evidence-based practice is: "a problem-solving approach to clinical care that incorporates the conscientious use of current best evidence from well-designed studies, a clinician's expertise, and patient values and preferences" (Fineout-Overholt et al., 2005, p335). Evidence-based practice is a much more inclusive term than research utilisation, and demands different knowledge and skills of the practitioner (McCleary & Brown, 2003; Melnyk, Fineout-Overholt, Stone, & Ackerman, 2000). It is confusing to read literature that uses terms carelessly, and mixes concepts; although research utilisation is part of evidence-based practice, these terms are often used synonymously.

However, not all authors agree with the need for this distinction. French (2002, p255) questions whether evidence-based practice is a distinct construct or whether, as a symbol, evidence-based practice is an overlapping of many pre-existing traditions, including research-based practice, clinical judgement, and professional practice development. He proposes that until evidence-based practice itself can be demonstrated to be a separate construct, research-based practice as a term is of more use to nurse clinicians, who could then link it more closely to the quality assurance

processes with which they are involved. Intuitively, there is considerable variation in the way the term evidence-based practice is used in clinical areas, and any fine distinctions between the terms *evidence-based nursing* and *research-based nursing* are of minimal concern to nurse clinicians.

However, busy health professionals are concerned about how they should select from the tens of thousands of biomedical and other relevant articles published each year, when endeavouring to find the most applicable research evidence to use in practice. For example, it has been estimated that general practitioners would need to read approximately twenty articles daily to keep abreast of the necessary evidence that could inform their practice (National Institute of Clinical Studies and the Australasian Cochrane Centre, 2004). Also, do individual practitioners possess the skills to judge the quality of the research in individual articles, given that they may not have the access to the 'best' resources? If practice is to be based upon the best evidence, and given the ever-increasing availability of publications, busy practitioners are advised to use resources that have already appraised the most clinically relevant research findings. According to proponents of evidence-based practice, in a perfect world there would be systems of appraised research findings relating to a particular clinical problem, directly linked to the patient's records, thereby assisting the practitioner to decide upon the best treatment for that particular individual. In such a scenario, systems of evidence are regarded more highly than synopses, summaries and individual studies (Haynes, 2005). This so-called perfectly integrated system does not yet exist, and the individual practitioner often needs to assess the relevance of findings from individual research studies. Whereas appraisal

of research often focuses on the shortcomings of a particular study, perhaps it may be more beneficial if practitioners change this mindset and appraise the research for what it can contribute to the care of a particular patient (Fineout-Overholt et al., 2005). However, for this paradigmatic shift to occur, it may well be necessary to consider how research critique skills are taught to health professionals.

With respect to the evidence, there is a ranking given to different types of evidence, with the findings of randomised controlled trials being the 'gold standard', and opinion, consensus and sometimes findings from qualitative research being the lowest level in the hierarchy (Grypdonck, 2006). Evidence-based medicine values the findings of well-conducted experimental research; and when faced with choosing the most appropriate drugs to prescribe, this type of research may well be most relevant to a medical officer. Indeed, the Cochrane Collaboration's motto, as portrayed on its Website, is "the reliable source of evidence in health care" (The Cochrane Collaboration, 2005). However, often the questions of most interest and relevance to nurses can not be answered by experiments, and qualitative approaches may lead to greater understanding. Yet, nurses learn that these are rated the lowest level of evidence, and research funding bodies and indeed the general media reinforce the high value placed upon scientific experiments. The 'levels of evidence pyramid' has been amended to give a ranking to qualitative research, which is of use to the practitioner when seeking answers to questions about meaning rather than answers to questions about effectiveness (Fineout-Overholt et al., 2005, p339).

Some models of evidence-based healthcare such as that developed by the Joanna Briggs Institute (JBI) acknowledge that the fundamental concept of evidence is extremely complex; in the JBI model, evidence is understood as the "basis of belief…and that the type of evidence needed depends on the nature of the activity and its purpose" (Pearson, Wiechula, & Lockwood, 2005). JBI was established just over ten years ago, in 1996, and although it is based Adelaide, South Australia, it has grown to become an international collaborative with involvement of "nursing, medical and allied health researchers, clinicians, academics and quality manager across 40 countries in every continent" (Joanna Briggs Institute, 2007, para 5). JBI developed from a recognition that there needed to be a means by which evidence from a diverse range of sources could be evaluated and synthesised, and presented to clinicians in an appropriate format so that the 'best available' evidence could be incorporated into health care practice. Such strategies are necessary because, internationally, it is believed that the "majority of [healthcare] practitioners do not base their practice on research" (Scott-Findlay & Golden-Biddle, 2005, p359).

If the goal of evidence-based practice is to improve patient care, it has been claimed that the adoption of evidence-based practice within a "context of caring [will lead] to the best clinical decision making as well as outcomes for patients and their families" (Fineout-Overholt et al., 2005, p335). Notwithstanding the fact that evidence-based practice has been part of the discourse of many health professionals and academics for a decade or more, it may well be that the delay between the publication of research findings and their uptake into practice has not been markedly reduced, or practitioners do not see the relevance of the research to their practice (Hunt, 2001).

This situation may have contributed to the development of numerous models to accelerate the adoption of evidence-based practice, although these models still need to be tested empirically (Fineout-Overholt et al., 2005). The proliferation of evidence-based practice models may be confusing to a busy nurse clinician. Which model to choose? Which source of evidence will most likely provide the answers to clinical questions? How do you learn the skills associated with evidence-based practice? Literature pertaining to the measurement of the value of any of the models of evidence-based practice to busy practitioners was not located. It may be necessary to develop or modify models of evidence-based practice so that they are of more relevance and use to the busy practitioner.

There are other criticisms of evidence-based practice, including that it is prescriptive 'cookbook medicine', that there is often a lack of evidence to answer the particular clinical questions that nurses may have, and that there is an over-reliance on randomised controlled trials (Pearson et al., 2007). The term 'evidence-based practice' has been adopted by other professions, such as management, and hence some nurse clinicians may believe that it is overused and has lost some of its importance, and may 'switch off'.

There are several strategies in place within the health district in which the current study took place, to assist with the provision of evidence to busy practitioners. All health professionals in the hospital had access to electronic and hard-copy journals, in addition to access to electronic databases, for example, *CINAHL*, *Medline*, *Cochrane Collaboration*, and general access to the *Joanna Briggs Centre for*

Evidence Based Nursing and Allied Health. Other sites for searching, requesting and locating information electronically are also available, in addition to the on-site health library that, in turn, collaborates with the library of the adjacent university. Nurses also had access to on-site seminars, hospital newsletters, departmental journal clubs, multidisciplinary case presentations, and opportunities to be involved in research projects. As indicated in the Preface, this study is about the culture of nursing research in a particular hospital ward, and aspects such as the extent to which the nurses accessed the evidence and information available to them, or utilised other experts to assist with the clarification of the best evidence in practice, are explored later. At the outset, it was considered that barriers, additional to those associated with simple dissemination of information, would significantly influence the use of research findings in practice (Dunn, Crichton, Roe, Seers, & Williams, 1997, p1204).

1.4 Chapter summary

The increased emphasis on nurses being actively involved in research is reflective of the emphasis placed upon research within the health system. This chapter has summarised the development of nursing research over time, across the world, and presented some of the contextual issues that have influenced the progression of involvement by nurses with research. The evidence-based practice 'movement' has most recently been of considerable influence, and I return to this in later chapters of the thesis in the context of the analysis of the findings of the current study. However, it is to be noted at the outset of this study that the term *evidence-based practice* has expanded and is used less uniformly in many contexts away from its original use in evidence-based medicine.

Having presented the contexts within nursing, and health in general, that have increased the emphasis on research, the following chapter, Chapter Two, explores the research literature about the involvement of nurses with research.

Chapter 2: Review of the literature

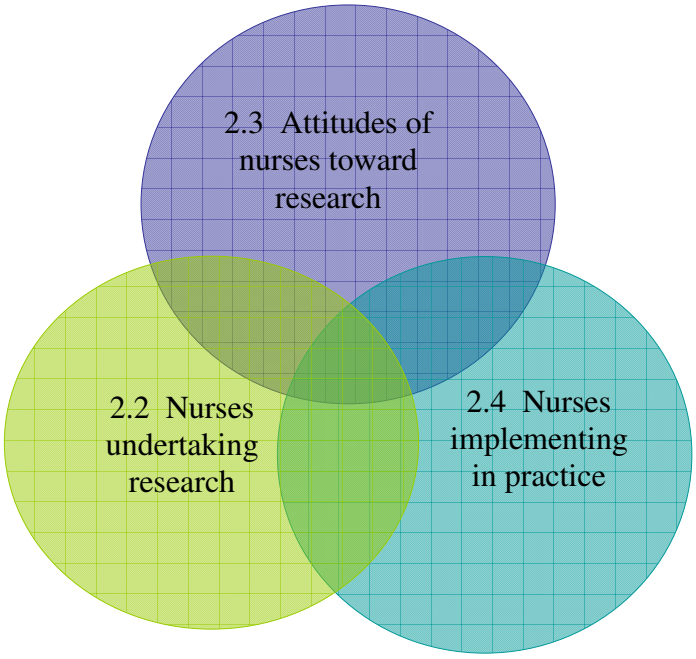
2.1 Chapter introduction

This literature review chapter is lengthy, because I considered it necessary to provide an extensive background to the context of the present study. Despite its length, it only includes a fraction of the literature retrieved throughout the progress of the study. I needed, however, to impose some time boundaries on updating of the literature review, and I have generally restricted the literature to that available up until early 2007.

As identified in the historical overview, nursing research was initially generally undertaken by nurses as part of an academic award. There have been increasing expectations of nurse clinicians with regard to their awareness of research, how to use research and how to become involved in nursing research. This chapter examines different perspectives of involving nurse clinicians in research, and describes some of the barriers encountered in relation to clinical nursing research. This leads into a discussion of the measurement of the attitudes of nurse clinicians toward research. A later section of the literature review focuses on the utilisation of research findings by nurse clinicians. Attitudes of nurses toward research also affect the extent to which nurses' practice is informed by research findings. These distinctions between attitudes, the use of research findings, and nurse clinicians undertaking research in a clinical setting, are somewhat arbitrary, but have been incorporated as an organising framework within the literature review (refer to Figure 2.1). The literature overlaps, and literature pertaining to some aspects is more

plentiful than that pertaining to other aspects. This lack of clarity and distinction within the literature may well reflect the complex nature of clinical nursing research. The chapter concludes with a small section about improving nurses' research awareness.

Figure 2.1 Sections of the literature review



2.2 Nurses undertaking clinical nursing research

There are pressures from within and from without nursing to involve nurses in the conduct of research within clinical settings. External pressures include: the broad ideology of evidence-based practice (stemming from evidence-based medicine);

increased consumer knowledge and expectations; and the necessity to account for the cost effective use of resources (Hicks, 1996). Internal pressures include: the persistent perceived gap between generation of knowledge through research and consequent changes in practice; and the desire from within the nursing profession to establish its own body of knowledge (Emden & Borbasi, 2000; Rosenfeld et al., 2000). Different arguments have been posed relating to a research-practice gap. Deans et al. accept that such "a gap exists between psychiatric nursing research and clinical practice" (1997, p25). Research can be professionally satisfying to individual nurses whilst improving nursing practice, and research can also provide the evidence required by nurses as a group to argue for limited resources (Deans et al., 1997, p25).

This involvement of nurses undertaking clinical nursing research can extend from reviewing literature, designing and testing data collection tools, analysing data, through to the design and management of the whole research project. Whilst nurses acknowledge the value of nursing research, they may not be interested or may be unwilling to be involved for various reasons. Deans et al. (1997) used an adapted form of the Probe Nursing Research Questionnaire, together with Selby's Research Attitude Inventory, to investigate the attitudes towards and involvement in research of a sample of Australian psychiatric nurses who worked in a rural setting. All 99 respondents had completed a hospital certificate as their initial nursing qualification. Four-fifths of the respondents indicated they were interested in, to varying degrees, doing a research project. However, only one third responded that they would devote more than one-tenth of their time to that research, given that the time was available,

and ten respondents were involved in a research project at the time of this study (Deans et al., 1997, p28). The major identified factors constraining involvement in research were time, and lack of knowledge, skill and research education.

Contrary to findings in other studies, Deans et al. (1997) found that the nurses with minimal or no formal research education were the most positive toward research. They also found that the psychiatric nurses who were more directly involved with nursing care claimed to be more positive toward involvement in clinical nursing research. The authors offered possible reasons for these contrary findings – the less experienced nurses may have been exposed to research education programs as they undertook tertiary studies; burnout amongst nurses with more years of experience; and priorities other than research for those nurses at higher levels within the management structures.

A larger study of Victorian nurses' involvement and attitudes to research was published the year prior to the publication of the study by Deans et al. (Sellick, McKinley, Botti, Kingsland, & Behan, 1996). This study was not confined to psychiatric nurses in a rural setting, with the 458 respondents coming from seven different hospitals – four capital city and three rural. Although more than 30 per cent of all respondents to the questionnaire designed specifically for this project had been involved in implementing a research study, few had written articles or presented their research at conferences (Sellick et al., 1996, p8). One quarter of the respondents had positions at middle management or higher; the nurses at these higher levels "scored higher on all measures of research interest and skill, attitudes to nursing research and

research activity" (Sellick et al., 1996, p10), and were statistically more likely to have been involved in research in three different ways: implementing a research study, participating as a research team member, and conducting research. Those nurses with nursing qualifications higher than a hospital certificate were more likely to further increase their knowledge about research and their research activity, either by participating as a research team member, or conducting their own research project (Sellick et al., 1996, pp10-11). The major factors constraining involvement in research identified by respondents were: "lack of time, workloads and limited opportunities for collaboration (Sellick et al., 1996, p11)". The common factor in both the Deans et al. (1997) and Sellick et al. (1996) studies was the lack of time for research. Clinical nursing research may be started but not completed, and in a guest editorial Johnson (1996, p4) cited insufficient time or a change in jobs as reasons given for the non-completion of clinical research studies in south-western Sydney.

Published at the same time as the study by Sellick et al. was another exploring the perceptions of Sydney nurses towards research (Wright, Brown, & Sloman, 1996). That study examined the questionnaire responses given by 410 general and psychiatric nurses. Some of the responses are incongruent with each other and appear too favourable. For example, only 15 per cent of respondents reported reading nursing research journals often, yet 65 per cent reported sharing research findings with colleagues (Wright et al., 1996, p17). The authors concluded that some nurses, even if supportive of the notion of nursing research, did not want this research to be conducted in their clinical area.

Happell, Johnston and Pinikahana (2003) identified some reported increase in Victorian nurses' involvement in research since the time of the earlier study by Sellick et al. Respondents to Happell et al., however, generally held a senior nursing position and may have expressed a 'politically-correct' organisational viewpoint. This, together with the small response rate, may have overestimated the positive nursing research culture of the organisations. There were statistically significant differences in the provision of financial resources and the encouragement given to nurses to undertake research, if research was included within the organisation's mission statement. The size of the organisation was also positively related to: the opportunities for nurses to be involved in research; access to research and to colleagues knowledgeable about research; and encouragement to pursue education related to research skills (Happell et al., 2003).

Wells and Baggs (1994), who explored the research interests and activities of nurses at different levels working at a large American health facility, claimed that their study was the first to focus on a group with those characteristics. The respondents to their survey had higher levels of nursing education than nurses in the previously described Australian studies, with more than half of the 279 nurses having a Masters degree. The authors found that the number of statistics courses and the exposure to research that comes through higher education were factors important in conducting research. Advanced practice nurses, all at least masters prepared, were more involved in doing research than the other nurse groups. However, all nurses claimed to participate in and use research as per their role descriptions and expectations (Wells & Baggs, 1994, p148).

Rather than dwelling on inhibitors to undertaking clinical nursing research, the benefits of partnerships between nurse clinicians and nurse researchers, were described by Stajduhar et al. (2002, p17). The participants in this Canadian study identified that research can be used to influence nursing practice, and that doing research is an excellent way of learning about research and about oneself. Involvement in the particular collaborative nursing research project changed the way that the nurse participants thought about research. However, Sterling (2001) cautions that nurses conducting clinical research need to be familiar with the clinical environment of the research, even if part of a collaborative project. This may necessitate nurse researchers undertaking some clinical updates, to help them determine their real interest in the clinical topic of interest. Currency in the clinical area of interest may also produce additional and/or more clinically-relevant research questions (Sterling, 2001, p47).

A Danish study in which clinical nurses had participated in a specifically designed twelve-month research course identified that such education resulted in tangible outcomes (Adamsen et al., 2003b). The investigators interviewed this group of clinical nurses, the study group, and a reference group of clinical nurses from other facilities who had not participated in the course; the study group nurses reported more commitment to using and conducting research. Participation in the research course led to active planning of research projects by 89 per cent of the study group, whereas just over one-third of the clinical nurses in the reference group were currently working on a research project (Adamsen et al., 2003b, p446). The interview responses indicate that participation in the education course had positively

influenced the participants' commitment to accessing English language research literature, their ability to find time during their working shifts to participate in research projects, and their willingness to utilise their own time to do research projects than were those nurses in the reference group.

The study by Adamsen et al. demonstrated the relevance of research education to individual clinical nurses, and the crucial part it can play in changing the research culture of a hospital. However, organisational factors are also important, and in that study the reference group nurses came from different hospitals to those of the study group nurses; little is known about those organisations' commitment to nursing research. Both groups of nurses had similar responses for the use of evidence-based nursing knowledge in practice. Although the study group nurses reported lack of support for their research by senior nurses and their colleagues, the authors proposed that the knowledge and support received during the course resulted in a positive commitment to research (Adamsen et al., 2003b, p447). Even nurses employed as nurse researchers in a clinical setting report inhibitors to completely fulfilling the goals of their positions (Mateo & Kirchhoff, 1995). Barriers reported by these nurses across America include the absence of personnel or administrative support, lack of funds, lack of interest of other staff in nursing research, and different priorities of the organisation (Mateo & Kirchhoff, 1995, pp39-40).

Whilst the previously-cited studies have used self-reporting questionnaires about nurse clinicians' research activities, Woods et al. (2000) described a collaborative effort of nurse clinicians who undertook research to improve the outcomes of

patients in a midwestern community of the United States of America. Six of the original research team of seven had a Masters; the seventh member had doctoral qualifications and held a joint appointment with an academic institution. The research team deliberately involved other nurses in the project, which was undertaken in several hospitals. The goals of employing a collaborative approach, including development of patient care standards, increased education of nurse clinicians, and better use of resources, were achieved. Even with this planned approach and level of expertise, the investigators encountered difficulties undertaking clinical research, and claimed that the use of nurses to collect the data was the major disadvantage of their approach (Woods et al., 2000, p.16). The study results were communicated via presentations to all areas involved, and published so that they were available to a wider audience. Patient care outcomes from the practice changes were monitored through the institutions' quality programs; an unexpected outcome of the project was the establishment of "an ongoing interagency critical care research group that could collaborate to conduct nursing research on other nursing practice issues" (Woods et al., 2000, p16).

Just over a quarter of a sample of 400 Australian nurses reported that they had been involved in research, usually as part of postgraduate studies. Minimal numbers had presented their research at conferences, and even fewer had published their research. The reason given for not disseminating their research findings in such ways "was because it was 'part of a course'" (Retsas, 2000, p601). Australian nurses have, however, reported interest in doing nursing research. For example, more than half of the 400 Australian nurse respondents reported an interest in "learning about how to

start a research project" (Retsas, 2000, p601) and an even larger proportion would welcome being involved in a clinical nursing research project.

Whilst the majority of studies about nurses' participation in research have been quantitative in nature, Roxburgh (2006) used focus groups and individual interviews with a small group of Scottish nurse clinicians to explore the identified factors that constrained their involvement with nursing research. The findings were grouped around six themes, including the organisational support and skills that nurses need to become research active, and their attitudes about participating or conducting research. This leads into the next chapter section, about the literature investigating the attitudes of nurses generally toward nursing research.

2.3 Nurses' attitudes towards research - barriers and facilitators to research utilisation

"The lack of uptake of research findings and the inappropriate use of invalid or unreliable evidence in clinical practice are both important issues that need to be addressed" (Dunn et al., 1997, p1204). One tool that has been used by researchers in several countries to ascertain barriers and facilitators to the use of research by nurses in practice has been the BARRIERS Scale, a 29-item self report questionnaire developed by Funk and her colleagues in the United States of America (see, for example, Carrion, Woods, & Norman, 2004; Dunn et al., 1997; Kajermo, Nordstrom, Krusebrant, & Bjorvell, 1998; Oranta et al., 2002). Funk et al. employed stratified random sampling to select 5000 nurse clinicians, academics and administrators

across 22 states, from whom they had a response rate of 40 per cent. Funk et al. conducted a factor analysis of the 29 items on the questionnaire; all but one item loaded onto one of four factors, which were labelled *Nurse*, *Setting*, *Research* and *Presentation*. Content validity was reported, with reliability varying across the four factors (Funk, Champagne, Wiese, & Tornquist, 1991b). More than half of the 924 nurse clinician respondents rated 19 of the 29 items as moderate or great barriers to the use of research findings in practice (Funk, Champagne, Wiese, & Tornquist, 1991a, p91). The top five barriers identified by the 924 nurse clinician respondents as being of a great or moderate barrier were:

> The nurse does not feel she/he has enough authority to change patient care procedures (*Setting* factor);
>
> There is insufficient time on the job to implement new ideas (*Setting* factor);
>
> The nurse is unaware of the research (*Nurse* factor);
>
> Physicians will not co-operate with implementation (*Setting* factor); and
>
> Administration will not allow implementation (*Setting* factor). (Funk et al., 1991a, p92)

Four of these items are represented by the factor of *Setting*, implying that aspects of the organisation act as barriers and limit the use of nursing research in practice.

Other researchers have subsequently used this BARRIERS Scale. Dunn et al. (1997) analysed responses to the BARRIERS Scale from a convenience sample of 316 nurses in the United Kingdom. The respondents were either clinical nurse specialists in palliative care, nurses who were caring for the elderly, or nurses who attended a

critical appraisal skills workshop, but Dunn et al. did not separate responses by the different grades of nurses, or by the areas of practice, in their analyses of the data. After submitting their data to a repeat factor analysis, Dunn et al. (1997) found that their analysis did not support the factors originally proposed by Funk et al. in 1991, and concluded that the American factor model was not entirely appropriate for this British sample. Also, when comparing the ratings of the individual items as barriers across the studies, three of the five items identified by respondents to Dunn et al. as being of great or moderate barriers to the utilisation of research had not been among the top five barriers in the Funk et al. study. The top five barriers as rated by respondents to Dunn et al. included two associated with the factors of *Setting* and *Presentation*, and one from the *Nurse* factor (refer to Appendix A). The British nurses identified that they valued research, "but this alone is not sufficient for using research in practice" (Dunn et al., 1997, p1209). Nurses in this study lacked the confidence to evaluate research for practice. However, "issues to do with administration and authority are perceived as less of a barrier in the UK than in the USA" (Dunn et al., 1997, p1207).

Oranta et al. (2002) translated the BARRIERS Scale into Finnish, added an extra item, *The research is published in a foreign language,* and pilot-tested the questionnaire, which also included demographic information about the respondents. They then obtained an 80 per cent response rate from the initial convenience sample of 316, drawn from registered nurses in two major hospitals in Finland. Again, there were differences between the results from the Oranta et al. study and the results from other studies using the BARRIERS Scale, in both the degree to which an item was

seen as a barrier and the ranking of the items as barriers to research utilisation. The major barrier identified by the Finnish respondents was the fact that research is published in a foreign language. Nurses with more than 15 years experience reported encountering significantly fewer barriers to research utilisation than did the less-experienced nurses. Three items were perceived as smaller ($P<0.05$) barriers to research utilisation by nurses holding more senior positions, the "ward sisters" as opposed to "staff nurses". These items related to nurses' awareness of research, authority to change patient care procedures, and the language of publication. Despite the discipline of nursing science in Finland being young, the Finnish nurses did not feel as "isolated from knowledgeable colleagues with whom to discuss research" (Oranta et al., 2002, p210) as did respondents in countries where the discipline is more established such as the United States of America. Similarly, the Finnish nurses were less likely than nurses in the United States of America, United Kingdom and Sweden to see the item *Facilities are inadequate for implementation* as a barrier to research utilisation. The Finnish nurses identified 360 different facilitators of research utilisation, across each of the four factors of the BARRIERS Scale, with the *Setting* and the *Presentation* factors accounting for 274 of these facilitators.

Swedish nurses have also completed the BARRIERS Scale. Seventy per cent of the 366 registered nurses randomly selected by Kajermo et al. (1998) from two major Stockholm hospitals, returned the completed questionnaires, which comprised the BARRIERS Scale and demographic data. The rankings attributed to items perceived by these nurses as posing moderate to great barriers to research utilisation differed to the rankings in the previously discussed studies by Funk et al., Dunn et al., and

Oranta et al. Seventy-eight per cent of the nurses rated the unavailability of research reports and articles as a barrier, but this item did not feature amongst the top five identified barriers in the previously-discussed studies from the United States of America, United Kingdom or Finland (refer to Appendix A).

Kajermo et al. (1998) found statistically significant differences between nurses with different high school and nursing educational backgrounds. Nurses whose education had emphasised practical over theoretical and research orientations reported more barriers to the utilisation of research. In response to a question about the three greatest barriers to research utilisation, the most frequently nominated barrier was *There is insufficient time on the job to implement new ideas* (Kajermo et al., 1998, p803). Kajermo et al. reflected that lack of time may be a more acceptable excuse given by nurses as a barrier to research utilisation, if the organisation is perceived to be non-supportive to changes in practice. Alternatively, it could be that the individual nurses might lack interest, or education, in research. Although, in climates of resource shortages or competition for the resources available, there may well be a true lack of time available for research utilisation. The facilitators to research utilisation as nominated by Swedish nurses were grouped by Kajermo et al. as "knowledge, communication, resources, support and attitudes, and research" (1998, p803), in preference to allocating them to the four factors of barriers used by Funk et al. Kajermo et al. concluded that researchers, administrators and nurse clinicians share the responsibility for research utilisation, however they also recommended that "more research is needed to elucidate the actual use of research findings" (1998, p806).

Subsequent to the 1998 study, Kajermo, Nordstrom, Krusebrant and Bjorvell (2000) used the BARRIERS Scale with nursing teachers, students and administrators, and a group of physicians. Both the nursing students and nurse teacher groups identified the factors, sub-scales of Organization (*Setting*) and Communication (*Presentation*), as presenting the greatest barriers to research utilisation. A similar perspective had been found in the earlier study of Swedish nurse clinicians (Kajermo et al., 1998). The nurse administrators and the physicians perceived that the sub-scales *Nurse* and *Communication* posed the greatest barriers. Kajermo et al. (2000) offered some explanation as to the different ratings given to the *Nurse* sub-scale, suggesting that the nurse clinicians may underestimate the nurse as a 'barrier'. However, the nursing students are, as an outcome of their education program, more research aware and have higher expectations of a research culture in the clinical setting, but they may not have encountered this as reality on their clinical placements. Kajermo et al. (2000) proposed that educating nurse clinicians about research, as the clinicians themselves suggested, would facilitate research utilisation. It is crucial for nurse clinicians to be positive about research because of their role as preceptors to nursing students.

In the Kajermo et al. (2000) study, as in other studies employing the BARRIERS Scale, the largest number of 'no opinion' responses related to items in the factor *Research*, perhaps indicating that there is a lack of expertise relating to nursing research. Kajermo et al. suggested that the particularly large number of 'no opinion' responses in their study could have been attributable to the relative newness of nursing as an academic discipline in Sweden compared to the United States of America. They suggested that the appointment of "nursing researchers in the clinical

setting [would] support and facilitate a research-friendly culture and a research-based nursing practice" (2000, p108).

The use of research by nurse clinicians was investigated from the perspective of 400 Australian nurses in Victoria. Funk's Barriers to Research Utilization (BARRIERS) Scale was incorporated within a questionnaire that also sought demographic data and information about the nurses' journal reading habits. Six of the seven items that comprised the factor *Organizational support to use research* were rated by more than half of the participants as great or moderate barriers (Retsas, 2000, p604). The three most significant barriers were all related to organisational support. There were similarities between these responses to the BARRIERS Scale and the qualitative statements made by the nurses about what assisted them to use and to undertake research in their practice. Factor analysis of the responses to the 29-item BARRIERS Scale provided four factors that were different to the four factors as originally determined by Funk et al. Retsas (2000) commented that the different factors arising out of the factor analysis reflected the role of context in such research, and changes over time, such as changes in education, practice, values, could add to the contextual nature of responses to the BARRIERS Scale.

It is possible to compare the ranking of items that are perceived as a moderate or great barrier to research across studies that have used the BARRIERS Scale. For the Australian nurses, the greatest barrier was the same as that of the nurses from the United Kingdom in the Dunn et al. (1997) study: *Lack of time to implement new ideas*. This item was also within the top five barriers for a group of Finnish nurses

(Oranta et al., 2002), nurses from the United States of America (Funk et al., 1991b), and a group of Swedish nurse clinicians (Kajermo et al., 1998). McCleary and Brown (2003) administered the BARRIERS Scale, together with the Edmonton Research Orientation Scale, to a group of Canadian paediatric nurses. Only 11 of the 29 items on the BARRIERS Scale were rated by more than half of the paediatric nurses as being of a moderate to great barrier to research utilisation (McCleary & Brown, 2003, p367). Appendix A contains a table that summarises the rankings of the items representing a moderate to great barrier to utilisation as given by the respondents in selected studies that have used the BARRIERS Scale. Fifteen of the Scale's 29 items were not ranked within the top five in any of the studies. However, that table does not provide the detail of the percentage of the samples that rated a particular item as a barrier, which changed over time and across different studies. For example, only 30 per cent of the Canadian paediatric nurses rated item 19, *Administration will not allow implementation,* as a barrier, compared to 70 per cent of the American nurses in the original study by Funk et al. The item, *Does not have time to read research,* was rated a barrier by four-fifths of the sample of Canadian paediatric nurses, placing it as the major barrier, but this item was ranked tenth and eighth by respondents to the Funk et al. (1991) and Dunn et al. (1997) studies respectively.

In a more recent study that employed the BARRIERS Scale, Australian nurses were found to report fewer barriers to research utilisation than their American or British counterparts (Hutchinson & Johnston, 2004). In that study, the five most frequently cited moderate/severe barriers were: insufficient time to either read research or to

implement new ideas, lack of awareness of the research, perceived insufficient authority to effect change in practice, and difficulty understanding the statistical analyses.

McCleary and Brown found only one statistically significant relationship between the nurses' understanding of research, or involvement in research or quality improvement projects, and the reported barriers: nurses who reported "more research use were slightly less likely to perceive their individual characteristics as a barrier to research use" (2003, p369). The paediatric nurses in this study who had "completed a course about reading or using research" (McCleary & Brown, 2003, p369) rated the *Organization* as a more important barrier than did nurses without such education. McCleary and Brown offered the explanation that perhaps these were the nurses who had encountered obstacles as they attempted to implement research findings. McCleary and Brown advocated research into "the particular experiences of those who have tried to implement research in their practice [because questionnaires do not ascertain] specific experiences with barriers to implementing particular research" (2003, p372). Questionnaires, such as the BARRIERS Scale, elicit an individual's perceptions, whereas the use of research in nursing practice is a more inclusive process involving others. Retsas (2000), as did Kajermo et al. (1998), recommended that research needs to be undertaken into the actual utilisation of research in practice – what is useful, and how it is used. Retsas (2000) also suggested that the BARRIERS Scale could be used in different contexts as a needs analysis prior to developing specific strategies to address perceived barriers.

2.3.1 Nurse clinicians' attitudes towards research - measures other than the BARRIERS Scale

Hicks (1995, cited in Hicks, 1996) had previously found a very large discrepancy between the percentage of respondents who had undertaken research and who had subsequently published their findings via professional journals. Hicks (1996) argued that it is therefore less likely that practice will move from a ritual base to a research base unless nurse clinicians have access to research that they can read, evaluate and apply. Hicks argued for encouraging nurses to submit articles for publication, given a 50 per cent acceptance rate of articles submitted by nurses in the 1995 study. She further proposed that there is value in identifying any attitudinal disposition toward reluctance to submit research papers for publication, as a precursor to implementing specific strategies to effect a change in behaviour (Hicks, 1996, pp374-375).

Rather than merely analysing nurses' reported attitudes towards research, Hicks (1996) explored relationships between attitudes and research activity, by developing a 38-item attitude scale that incorporated information from the existing literature and information gained from interviews. After pilot testing, the final scale was reduced to 13 attitude statements, with responses along a five-point Likert scale; test-retest reliability was confirmed by administering the final scale to the 45 nurses who had pilot-tested the initial scale. The questionnaires were distributed "to a random national sample of 500 qualified nurses drawn from clinical practice, management and teaching" (Hicks, 1996, p375). No further details about the 230 respondents were provided so it is unknown if the attitudes differed according to the employment focus of the nurses. Factor analysis of the responses produced five distinct factors,

each of which Hicks claimed had face validity. The five factors, in decreasing order in terms of the amount of variance accounted for, were:

> Factor 1: "Nurses' subjective barriers to research" (18.5%);
>
> Factor 2: "Organizational/structural barriers to research" (11.9%);
>
> Factor 3: "Doctors' reactions to nursing research" (10.6%);
>
> Factor 4: "Health professionals' reactions to nursing research" (9.9%); and
>
> Factor 5: "Impact of nursing research" (7.7%). (Hicks, 1996, p376)

These factors and the items from which they were derived have similarities to items in other attitudinal scales, such as the BARRIERS Scale. Those nurses who held negative views on the four items that made up *Factor 1* were statistically "less likely to conduct research" (Hicks, 1996, p376). Hicks suggested that the attitude scale could be used as a screening tool to identify nurses to whom attitude change programs could be directed. Hicks (1996, p378) also identified, in relation to *Factor 4*, that nurses who believed that their nursing and allied health colleagues did not have confidence in nursing research findings, and whose hospitals were unlikely to implement nursing research findings, were statistically less likely to submit their research for publication. Strategies at both the individual and organisational levels, including organisational support for research, training in writing for publication, provision of resources, and attitude changes, were suggested by Hicks (1996) to address this lack of confidence.

In 1997, Hicks commented that traditional stereotypes held by nurses and other health professionals may also inhibit nurses incorporating research into their clinical

practice. Research may not be as highly valued as good clinical skills (Hicks, 1995, cited in Hicks, 1997, p514). Hicks (1997) contended that experimental designs, such as that of the randomised controlled trial highly regarded by the male-dominated medical profession, established funding bodies, and the evidence-based practice movement, may reflect values opposite to those historically underpinning nursing such as compassion, subservience, and a focus on practice rather than on research. Additionally, in an earlier study, Hicks concluded that nurses themselves evaluated research articles as significantly better with regard to the criteria of "research methodology, statistical analysis, and contribution to current knowledge" (1992, cited in Hicks, 1997, p513) when the authorship of the article was attributed to a doctor rather than to a nurse.

There have been numerous other, often isolated, studies that have examined reported attitudes of nurses towards research. Parahoo, Barr and McCaughan (2000) concluded that the attitudes of a group of 87 learning disability nurses in Northern Ireland towards nursing research were generally positive, although almost one-fifth did not see that research was relevant to their daily practice. The 17 nurses who had undertaken further studies in learning disabilities nursing reported using research sometimes/frequently in practice. A similar number of nurses who had not undertaken these studies reported that they never/seldom utilised research. Although the questionnaire was developed by Parahoo, similar barriers to research utilisation were identified as those identified by respondents in studies that used the BARRIERS Scale.

Valizadeh and Zamanzadeh (2003) used the questionnaire developed by Parahoo et al. with a sample of nurses in Iran. All 304 nurses who met the criteria and were selected by systematic random sampling responded to the questionnaire – a perfect response rate! The respondents reported positive attitudes towards research, yet few nurses used research findings in practice (Valizadeh & Zamanzadeh, 2003, p929). Respondents also reported that most nurses were not aware of research findings relevant to their practice. Perhaps this was related to the fact that nursing journals were the fourth source of research accessed by those nurses who did read research; with textbooks, supervisors and medical journals more frequently consulted. Those findings resemble results found by other researchers. For example, Veeramah (1995) had found that a sample of mental health nurses in the United Kingdom had positive attitudes towards research. The nurses generally agreed that practice should be based on research knowledge; and that they would participate in research if time was available, but their positive attitudes have not translated into increased utilisation of research. The inhibitors to utilisation of research findings have remained consistent over different studies, different samples, and different times. Any strategies introduced to increase nurse clinicians' involvement in nursing research would need to consider these reported barriers.

In a more recent Australian study, Happell, Johnson and Pinikahana (2003) used a questionnaire based on that of Funk et al. to ascertain attitudes to nursing research held by Victorian nurses. Comparisons are not directly possible with the other studies that have used the BARRIERS Scale because of these modifications, and the way in which the results were presented. However, similar issues were identified;

the major barriers to nurses' involvement in research identified by Happell et al. were:

> "Statistical analyses are not understood by most nurses";
>
> "Nurses do not feel they are capable of evaluating the quality of research";
>
> "Research is not reported in a clear and readable format"; and
>
> "Nurses are isolated from colleagues with research knowledge with whom to discuss the research". (2003, p11)

Nagy, Lumby, McKinley and Macfarlane undertook what they claimed to be the first systematic study "to identify the conditions that nurses believe are necessary for research to become the basis of their practice in Australia" (2001, p315). By combining information obtained from interviews of 12 nurses with the literature, Nagy et al. developed a 50-item questionnaire, pilot-tested the questionnaire with nurses from three Sydney hospitals, prior to distributing to all nurses who were working "during a selected 24h period in each hospital" (Nagy et al., 2001, p315). The response rate was 65 per cent: 816 questionnaires were returned. Nine per cent of the respondents held a Masters degree, and half of the respondents had either completed or were currently studying research subjects/courses. Factor analysis of the items resulted in six significant factors, incorporating 32 of the items. The nurses reported holding positive views about the value of evidence-based practice to patient care, with 72 per cent of the nurses supporting this factor; only nine per cent disagreed overall with that factor, with the remaining 19 per cent undecided. The other factors did not receive as much support by the respondents, with less than half of the nurses agreeing that: the support necessary for evidence-based practice was

available; they had time to devote to evidence-based practice; they had knowledge about research and statistics, and the skills to locate and evaluate research reports. The factor which attracted the least agreement (23 per cent), greatest disagreement (36 per cent) and most uncommitted responses (41 per cent), was *The clinical usefulness of the research* (Nagy et al., 2001, p317). This factor only contained two items, but the responses indicated that these nurses, who were generally very positive about research, questioned the usefulness of research in its current form for patient care. Nagy et al. proposed several strategies for overcoming the obstacles identified by these nurses, and by nurses in other studies, and they concluded that "further research must focus on the most effective and efficient ways to build an infrastructure that achieves evidence-based practice that improves nursing care and patient outcomes" (2001, p320). The use of research in practice will be further discussed in the next section of the literature review.

Kerr, Woodruff and Kelly (2004) examined the attitudes and activity of a group of nurses in Melbourne in relation to clinical nursing research, by using a similar sampling method to that used by Nagy et al. (2001) as described above, and the questionnaire used by Sellick et al. (1996), as referred to in section 2.2 of this chapter. The 178 completed questionnaires reflected a 68 per cent response rate. Similar to findings in other studies, this group of nurses expressed appreciation of the importance of nursing research, even though only 17 nurses reported previous involvement in a research project. There were statistically significant differences in attitudes between different sub-groups of the respondents. For example, older nurses expressed more enthusiasm toward being involved in a nursing research project and

found reading nursing research articles more enjoyable; nurses who had a postgraduate certificate agreed more strongly that they had access to the resources required to participate in research (Kerr et al., 2004, p20). The authors concluded that in this particular hospital, research activity levels were low. They suggested various strategies that could be appropriate to strengthen the organisation's research culture, such as specific programs to foster participation in research, research skills education, provision of resources necessary for research, and forums for discussing research.

In a study that utilised a grounded theory approach, nurses working in a variety of settings, including a small group of academics, were interviewed, and a problem tree that linked the identified barriers was developed by the researchers (Hannes et al., 2007). The researchers claimed that the interview responses generally were consistent with findings found in previous studies that had used quantitative measures, and they also anticipated that their approach could prove useful when change management approaches were being developed.

2.4 Nurses implementing research in clinical practice

"A research culture develops in tandem with research participation, research dissemination and utilization of research evidence" (Edwards, Chapman, & Davis, 2002, p89). Edwards et al. argue from the premise that the use of research within the clinical setting has not increased in line with the increased output of research. A similar conclusion, that nurses in the workplace are rarely seen to apply research into daily practice, was drawn by other researchers in Sweden (Bjorkstrom, Johansson,

Hamrin, & Athlin, 2003). Nurse clinicians may still view research as being controlled by academia, or they view research as separate to their patient care activities (Edwards et al., 2002, p90). Edwards et al. contend that change in this view depends largely on changes within individuals, leading to changes in the systems of nurse education and health care facilities. Student nurses, or recently-employed nurses, may quickly be socialised into the prevailing culture of a workplace if they do not think critically and reflect upon the degree to which research is valued in practice. Nurse leaders also have a significant role in changing the degree to which nurse clinicians engage in and with research. "Unless nurse leaders advocate change in the ways that nurses understand, value and initiate research, use of research evidence by clinical nurses is likely to remain problematic" (Edwards et al., 2002, p91). However, an intervention study conducted in a hospital in Brisbane, Australia, showed little change in attitudes toward nursing research, as measured on the Edmonton Orientation to Research Scale, following "multi-faceted clinically focused educational strategies" (Henderson, Winch, Holzhauser, & De Vries, 2006, p1559). There is additional literature that emphasises the role of organisational factors over individual factors in the involvement of nurse clinicians in research. The next sub-section of this chapter describes one conceptual framework for the implementation of evidence into practice.

2.4.1 Implementing evidence into practice – the United Kingdom Royal College of Nursing's conceptual framework

The utilisation of research by clinicians is not a simple linear process as proposed by some models. Rather, researchers on behalf of the United Kingdom Royal College of Nursing have proposed that actual implementation of research findings is a function of three elements – the evidence, the context or environment in which the research is to be used, and the facilitation of the process (Kitson, Harvey, & McCormack, 1998, p149). These authors recommend the simultaneous consideration of these three dimensions and have, since 1998, further developed and investigated these concepts. With regard to the nature of the evidence, nurses (clinicians) need to assess not just the research, but also need to consider clinical experiences and patients' preferences (Kitson et al., 1998, p150). It is not known whether evidence that is toward the high end of each of these subscales is actually utilised in practice, in preference to evidence falling toward the lower end of the subscales. Kitson et al. (1998) proposed that 'low evidence' research can still be successfully implemented if the 'context' and 'facilitation' are high.

Similarly, the context in which evidence is to be utilised has three dimensions, or subscales - culture, leadership and measurement. Kitson et al. (1998, p152) proposed that contexts where the culture is one of a learning organisation where people are valued; where there is clear leadership, and clear roles; and where internal and external performance is measured, are more likely to foster the implementation of research in practice. More recent concept analysis of the 'context' construct demonstrated that, because the use of the term is inconsistent, it is difficult to

determine its importance in relation to implementation of evidence into practice, and McCormack, Kitson, Harvey, Rycroft-Malone, Titchen and Seers recommended that the concept of context requires "further delineation and comparison" (2002, p95).

The concept of facilitation refers to how change is managed, and facilitators are "people who make things easier, help others towards achieving particular goals, encourage others, and promote action" (Kitson et al., 1998, p152). Although there are similarities between the roles of facilitator and local opinion leaders, Kitson et al. perceive the role of facilitator as more extensive and more conscious. In contrast to local opinion leaders, facilitation "seeks to get across professional and organisational boundaries by concentrating on development of interpersonal and group skills" (Kitson et al., 1998, p152). Kitson et al. have identified personal characteristics of effective facilitators and claim that implementation of research may not occur even in an environment conducive to change if there is no, or ineffective, facilitation (1998, p152).

Kitson et al. provided examples of four studies concerned with implementing research into practice. They were all 'high evidence' but differed along the dimensions of 'culture' and 'facilitation'. By comparing the outcomes of these studies, Kitson et al. concluded that:

> most successful implementation would seem to occur when evidence is high, the context is receptive to change with sympathetic cultures and appropriate monitoring and feedback mechanisms, and when there is appropriate

> facilitation of the change, using in a complementary way the skills of both external and internal facilitators. (1998, p156)

They suggested that facilitation may be the key variable in implementing research and suggested further exploration of their conceptual framework. Whether or not the three variables are discrete was uncertain, and the adequacy of the working definitions and the concepts of a high-low continuum for each sub-element were other aspects that Kitson et al. suggested be exposed to further study. Whilst they believed that the conceptual framework would be useful to practitioners as an evaluation tool and as an indicator of support required to implement research into practice, Kitson et al. identified some shortcomings of the framework. The framework does not explicitly "take into account the wider organisational, managerial, and political influences working upon the local situation. Neither does it consider issues of incentives or sanctions for changing practice" (1998, p157).

A subsequent paper further explored the role and function of the construct 'facilitation' in relation to getting evidence into practice. Using a concept analysis approach of existing literature, Harvey et al. (2002) attempted to clarify the relevance of facilitation to change. They found that the 'facilitation' concept was not yet fully developed and concluded that the facilitator role is "about supporting people to change their practice" (Harvey et al., 2002, p585) but that it is different to other change agent roles. For example, the facilitator role is an appointed one, internal and/or external to the organisation, and differs from local opinion leaders who effect change through their own personal characteristics. It appears that the existence of the appropriate mechanisms for facilitation, under the sub-scales of purpose, role,

skills and attitudes, lie at the high end of the facilitation dimension (Harvey et al., 2002, p586). These sub-scales within the dimension of 'facilitation' have changed since the initial proposal of the conceptual model by Kitson et al. (1998, p157). Harvey et al. (2002) suggest that there may well be occasions when a task-oriented approach rather than a holistic approach, the extreme ends of the 'purpose' sub-scale, may be more effective in facilitating change.

2.4.2 Other literature related to implementation of research by nurses

Thompson, McCaughan, Cullum, Sheldon, Mulhall and Thompson (2001) examined the type of research information useful for clinical decision-making as opposed to research utilisation per se. To overcome the deficiencies of self-report studies, which usually over-estimate the amount of research used, Thompson et al. used a combination of methods that involved "qualitative interviews, observation, documentary audit and Q methodological modelling of shared subjectivities amongst nurses" (2001, p376). Although clinical decision-making necessitates having the answers there and then, none of the wards in the three large hospitals in this study had on-line databases (Thompson et al., 2001). Lack of accessibility of research information has been noted earlier in this chapter as a barrier to research utilisation. Would the nurses' information sources and responses to the project have been different if they had had ready access to on-line research? As technology becomes more widespread, will nurse clinicians who have ready access to computers and on-

line sources of research evidence avail themselves of these resources to better inform their practice?

The most valuable resource for nurses' clinical decision-making was the accessible, experienced clinician such as the Clinical Nurse Specialist or Nurse Consultant, and the least useful sources of knowledge for clinical decision making were textbooks or local information files (Thompson et al., 2001). Such people were particularly valued because they were perceived to be a credible source of research-based knowledge, combined with clinical expertise and experience (Thompson et al., 2001, p387). It may well be that the reported difficulties that nurses have with interpreting statistics and research findings limits their use of research findings in real-time clinical decision-making if they do not have access to clinical experts. However, the availability of such experts may do little to encourage nurses to acquire such skills of their own.

2.5 Improving nurses' research awareness

There are several ways to increase nurse clinicians' awareness of research of relevance to practice, such as reporting of research findings through avenues that will be of benefit to practicing nurses. Whilst the need for nurse academics to publish is ever-present, nurse clinicians may not have access to the same publications or attend conferences where nursing research is formally presented. The reporting of research findings is an articulated expectation of ethics committees that have approved research, and funding bodies that have provided resources to conduct the research. Dissemination of research findings is the first step in implementing research into

practice (Cronenwett, 1995). Nurse clinicians, busy caring for patients, need to know about and have access to the research before they can consider its application to practice. Cronenwett (1995, p430) contends that although the dissemination strategy may vary according to whether the clinicians are using a decision-driven model to effect changes in practice or a conceptual model for research use, actual dissemination strategies in use still need to be further evaluated.

In the academic setting, there is a definite hierarchy representing the worth of dissemination formats, with book chapters and refereed journal articles more highly rated than conference papers or non-refereed journal articles (Roberts, 1997, p8) and the enduring nature of scholarly publications is valued (Roberts, 1995a). However, Charles (2000) introduces the opportunities afforded by newer technologies associated with the Internet to speed up the process of knowledge dissemination. As the amount of nursing research increases, it becomes more difficult for the nurse clinician to appraise the value of the research for practice.

Research needs to be clearly communicated to the target audience, so as not to add to the identified barriers to research implementation (McSherry & Simmons, 2002, pp126-127). The most effective, efficient dissemination method may vary according to the information, and the group to which it is to be conveyed (Charles, 2000, p468). Clinical nurse researchers should expect publication to be part of the research process (Johnson, 1996). Similarly, Scullion (2002) confirms that dissemination is an integral part of designing research; and that the time and financial resources required for effective dissemination must be included in the project's budget.

Scullion argues that dissemination of findings is complex, and that the traditionally encouraged process of dissemination of research findings by publication is essentially a passive process similar to diffusion or osmosis. He proposes that the key elements of dissemination strategies are the source of the information, message to be conveyed, method of dissemination and the target groups who need the information. Inclusion of these factors in a dissemination strategy will, according to Scullion (2002), most likely improve the utilisation of research findings in practice. Several of these factors have been discussed in earlier sections of the literature review, specifically in relation to utilisation of research in practice. The following sections of the literature review highlight different modes of dissemination of research findings.

2.5.1 Publishing in journals

The *Australian Journal of Advanced Nursing* commenced in 1983, with the express purpose of being a medium for nurses to publish their peer-reviewed nursing research (Borbasi, Hawes, Wilkes, Stewart, & May, 2002, p494). In the early years of its circulation most articles published in the *Australian Journal of Advanced Nursing* reported a quantitative rather than a qualitative approach (Roberts, 1995b). This preference for experimental methods in nursing research was likely to be related to the fact that Australian nurses, as they moved into academia and research, "were nourished in other disciplines, many of which used positivistic methods" (Lumby, 1991, p478). Nurse authors are encouraged to publish in widely read generalist publications as well as in research and scholarly journals (Salvage, 1998, cited in Charles, 2000, p465) and by the year 2000 there were several other Australian

generalist nursing journals that published peer-reviewed articles (Wilkes, Borbasi, Hawes, Stewart, & May, 2002). Additionally, there are specialist nursing journals such as the *Australian Journal of Mental Health Nursing*, which publish peer-reviewed articles. Hence, nurses who seek publication of their research findings, first need to decide the most appropriate journal in which to seek that publication. In a study of Finnish nurses, Oranta et al. remind us that a lack of research published in Finnish restricts the implementation of research findings in that country. At that time, Finnish nurses found themselves with "only one refereed nursing science journal in the country" (Oranta et al., 2002, p210). This was a similar situation to that in Australia a decade earlier, except that Australian nurses have general access to other journals written in their 'first' language.

More Australian nurses became involved in research at undergraduate and postgraduate levels as nursing education completed its move to the tertiary education system in all States by the early 1990s. An essential aspect to scholarship is the communication of knowledge such as may arise from research (Kitson, 1999). Roberts (1997) examined the scholarship productivity of Australian nurse academics, by calculating a scholarship index based upon the different values attributed to different modes of publication. For example, sole authorship of a book gained a score of '2', compared to a score of '1' for sole authorship of a refereed journal article, or a score of '0.2' if the academic was the sole author of a non-refereed journal article. Roberts did not differentiate the nature of these publications as research only; rather, she included other types of scholarly activities such as theoretical scholarship and clinical scholarship. Roberts (1997, p.9) found that the

mean scholarship index of all 714 respondents was 0.9, the mean scholarship index for the sub-group of respondents who had published was 1.4, and almost one-third of the respondents had a scholarship rating of zero. This mean index of scholarship productivity was similar to earlier studies, cited by Roberts, which were undertaken in the United States of America and Canada. However, it was less than the average scholarly productivity rating that Roberts calculated for other academic disciplines in Australia, which were "Social Sciences 4.1, Humanities 1.5, Agricultural Sciences 1.5, Engineering 1.1" (1997, p8). Australian nurse academics, according to Roberts (1997, p12), were focussing their energies on forms of scholarly publications on which universities place a relatively low value. Although pressure of work, teaching and clinical instruction, were found to be factors constraining scholarly activity, Australian nurse academics at the time of Roberts' study were spending their time on scholarly activities such as conference presentations that attracted less recognition for themselves and their employers.

Whilst disseminating research is an essential step to improve the utilisation of evidence in practice, processes such as the United Kingdom's Research Assessment Exercise (RAE) and Australia's Research Quality Framework (RQF), impel "academics to publish in high-impact journals, attract external research funding (often regardless of the benefits to practice) and more generally to pursue research as a way of attracting financial status and academic kudos" (Segrott et al., 2006). Thus, these publications may be of reduced relevance to nurse clinicians, the focus of the current study, who seek research that they perceive is directly linked to their practice, and the divisions between the academic and clinical worlds become larger. Crookes

and Bradshaw (2002, p178) discuss how those nurse academics in the United Kingdom who are employed primarily as research-only staff have been successful in producing research because they are given support similar to that provided to academics in the more established university disciplines. One strategy that has been credited as being successful in improving the partnerships between the tertiary and the health sectors in Australia has been the establishment of 'Clinical Chairs', whose major focus is research (Dunn & Yates, 2000). During the current study, plans for the establishment of a Clinical Chair at professorial level between the university and the health service district were progressed.

An earlier study from the United States of America showed that 65 per cent of tenured nurse academics with doctoral degrees had published research articles within a three-year period (Megel et al., 1988, cited in Clare & Hawes, 2001, p35). This may be because nursing education, including doctoral education for nurses, has been established in the universities for longer in the United States of America than in Australia. In Roberts' study, the Australian academics' qualifications and their level of appointments were significantly related to their scholarship index rating; those academics who were doctorally-prepared had a scholarship index rating of 2.5 related to the preceding one-year time period (Roberts, 1997, p10).

Using a quantitative approach, Borbasi et al. (2002) analysed 509 nursing research publications by Australian authors in refereed generalist nursing journals between 1995 and 2000. In that study, the *Australian Journal of Advanced Nursing* contained the most of those articles (18.3 per cent), with the *Journal of Advanced Nursing*,

published in the United Kingdom, containing only one fewer Australian study. The *International Journal of Nursing Practice*, another Australian journal, was the next most popular journal for publishing articles written by Australian nurses (14.1 per cent). Roberts (1997, p13) had proposed that the low level of scholarship would rise as Australian nurse academics gained higher qualifications and as nursing became a more established discipline in the tertiary sector. This earlier prediction of increased publication of Australian nursing research had not eventuated over the time period examined by Borbasi et al. (2002). In the articles examined by Borbasi et al. (2002), there were slightly more qualitative studies than quantitative studies. The breakdown varies across different journals, reflecting their preferences, with the articles published in the *Australian Journal of Advanced Nursing* and the *International Journal of Nursing Studies* more often employing a quantitative paradigm.

Although Roberts (1997) had not found gender differences in terms of scholarly productivity, Emden (1998) suggested strategies that nurse academics, who are mainly female, could use to develop and maximise their publication rate, which in turn would foster their research profile. These strategies included: being proactive in allocating time for research and writing about that research; electing to work in an organisation that encourages research; and considered selection of their preferred journals for publication.

Published articles with a clinical practice perspective were found to be well represented in a study of four Australian nursing journals (Jackson et al., 1996, cited in Borbasi et al., 2002, p494). Likewise, an analysis of the foci of the nursing

research articles published in the first ten years of the *Australian Journal of Advanced Nursing* showed that clinical practice research was the largest group (Roberts, 1995b). However, the topic areas of the published articles analysed in the study by Borbasi et al. (2002) did not reflect clinical practice as such, the major topics being nursing education, practice issues and professional issues of importance to nurses, and these emphases remained consistent across the six-year time period. Over half of the analysed studies obtained their data from nurses or nursing students.

From the Borbasi et al. (2002) study it seems that, in Australia, nurses are not disseminating their research findings via generalist nursing journals. The research that is published in generalist journals is not focused solely on patients and patient care; nor on the National Health and Medical Research Council's identified national health issues. Borbasi et al. (2002) concede that there will be nursing research published in specialty nursing journals, and they suggest that future research could examine the research topics that nurses read, and their reasons for reading those selected. An earlier Australian study found that, while half of the nurses surveyed reported regularly reading research articles, only one-tenth of the respondents reported incorporating research findings into practice (Nagy, Crisp & Brodie, 1991, cited in Borbasi et al., 2002, p490). Borbasi et al. also suggested that a "national strategy for nursing research" (2002, p496) would assist in raising the profile of nursing research within the broader field of health research. However, in recent exchanges in the *Collegian*, the journal of the Royal College of Nursing Australia, this is a debatable viewpoint (Cox, 2004; Mott, 2004; Wallis, 2004).

Retsas (2000, p601) found, in a study of 400 hospital nurses in Victoria, that whilst 65 per cent of the nurses claimed to read a journal at least monthly, only 16 nurses reported reading journals that could be classified as containing mainly research. Another six nurses reported that they read journals that contained some research, whilst another 237 nurses reported reading journals that contained little or no research. Swedish nurse participants in an educational program commented on the poor reading habits of many of their colleagues, which may well be exacerbated because the majority of articles are in English, a second language (Kajermo, Nordstrom, Krusebrant, & Lutzen, 2001).

Can we infer that because research is not being published, the relevance of nursing research to nurses in the clinical area is diminished? A review of articles published in the United Kingdom-based *Journal of Clinical Nursing* over the two-year period 2001-2002, identified 22 articles (11.4 per cent of total) written by Australian authors (Webb, 2003, p931). This is an increase on the number of Australian-authored papers previously published in that journal, as reported elsewhere (Borbasi et al., 2002). Webb's (2003, p932) analysis of all of the articles within the *Journal of Clinical Nursing* showed that over 71 per cent of the articles reported empirical research, and another seven per cent were 'research in brief' papers. Care of patients was the focus of study for two-thirds (93 of 141) of the research papers able to be classified in this way; with patients being the source of data in 63 of those studies. Whilst it was encouraging to see the clinical focus of the research, Webb (2003) noted that there were shortcomings in the detail provided by authors about methodologies and methods. A similar lack of detail about methodology and lack of

sophistication of designs was noted in the analysis of papers that were published in the *Journal of Advanced Nursing*, also based in the United Kingdom, in the year 2002 (Webb, 2004). This was disappointing, given that "nursing has increasingly been a university-based discipline over the past two decades in the countries that are submitting to *JAN*" (Webb, 2004, p231). However, these shortcomings in the information provided relating to methodologies and designs would now come "under closer scrutiny" (Webb, 2004, p230) since the *Journal of Advanced Nursing* has developed guidelines for authors, reviewers and editors to improve the quality of the reports of research. Australian nurses had only one fewer article accepted for the *Journal of Advanced Nursing* over the one-year period than did nurses from the United States of America (Webb, 2004, p229). Given the difference in populations between Australia and the United States of America, and that acceptance rates for all countries was "approximately one-third of the papers submitted from each country' (Webb, 2004, p229), Australian nursing is well represented in this highly-regarded journal.

Alignment of nursing research with national health priority areas, assuming there is congruence between the two, could also strengthen its relevance, as would an increase in collaborative research and international research (Borbasi et al., 2002). Indeed, Roberts (1995b) found that over a ten-year period there was an increase in the proportion of published nursing research articles, and an increase in the number of articles with multiple authors. A later study identified that, although nurses holding joint appointments did not publish a large number of articles, they were amongst the small group of prolific researchers (Wilkes et al., 2002, p19). Webb

suggested that one way for nurses to undertake higher quality research and to acquire sustainable funding for research "is to gain experience in multidisciplinary research teams" (2003, p934).

Other areas of potential investigation related to dissemination of research findings are the researchers' selection of journals, and the journals' rejection rates (Wilkes et al., 2002, p19). These would possibly provide evidence of attempts to disseminate research findings, and would suggest specific strategies to address any shortcomings such as the standard of writing. As noted, the *Journal of Advanced Nursing* accepted approximately one-third of articles submitted for publication in 2002, and the rejection rate for articles submitted was "relatively uniform" (Webb, 2004, p229) whether or not English was the everyday language of the authors. However, the acceptance rate of papers that have been revised following initial rejection by editors may be over 80 per cent (Emden, 1998, p32). There may well be a significant time delay between the completion of research, the writing and submission of an article for publication, and notification of acceptance or rejection. Nurse researchers from clinical settings in the United States of America have reported a lack of time for writing about their research, as well as "poor writing skills" (Mateo & Kirchhoff, 1995, p40) as inhibitors to publication. One outcome of the introduction of a postdoctoral Research Manager position to assist in developing a research culture amongst nurse academics at one Australian university has been a dramatic increase in the number of peer-reviewed published journal articles (Clare & Hawes, 2001, p35). In her role as the Executive Editor of the *Journal of Advanced Nursing,* Webb (2004) comments that authors need to make greater use of the guidelines provided by

the journal; and that the journal has a responsibility to establish and use guidelines that will raise the quality of the published articles. Emden (1998, p32) suggests that non-compliance of authors with a journal's referencing style can be interpreted as carelessness, which would result in rejection of the submitted paper.

Another finding of Borbasi et al. (2002) was the apparent lack of funding provided to those nurses who did publish, with less than 15 per cent acknowledging the sources of any funding. Of those who did acknowledge funding, the most common providers of such funds were professional nursing organisations. Insufficient resources has been an identified barrier to nurses undertaking research, as previously discussed. An absence of published articles reporting on nursing research funded by the National Health and Medical Research Council from 1994-1997 was noted (Borbasi et al., 2002, p495), thus, whilst some nursing research has been able to attract competitive funding grants, the information is not being disseminated through mainstream, generalist nursing publications. Therefore, the opportunities for results to influence practice are diminished. As Webb (2004) highlighted, research that focuses on improving patient care and outcomes is more likely to attract research funding, because it is aligned with the priorities of the funders, yet the perceived difficulty in gaining ethics committee approvals for research involving patients may deter nurses from engaging in more of such research.

More than 62 per cent of the Australian nurses who published their nursing research in generalist journals, 1995-2000, were employed by a university. This was more than double the frequency (29 per cent) of authors working in a health organisation,

and a small number of the authors (7 per cent) had joint clinical and academic appointments (Wilkes et al., 2002, p18). That study highlighted that a few authors account for a considerable portion of the published articles, "with 26 authors publishing 23.6% of the research articles" (Wilkes et al., 2002, p19), confirming previous Australian research.

2.5.2 Disseminating nursing research via research forums and conferences

Partly as a consequence of a new career structure, which legitimised nursing research "as a professional responsibility" (MacKay, Cruickshank, & Matsuno, 1991, p13), an annual nursing research conference day began in Western Australia in 1988. This may have been one of the earliest Australian nursing research conferences, and since this time there have been many nursing research conferences held on a regular basis in Australia, in addition to smaller nursing research forums hosted by individual hospitals such as those held at Sir Charles Gairdner Hospital (MacKay et al., 1991, p13).

The claim by Deans et al. (1997) that more nursing conferences specifically incorporate research themes was discussed previously, in Chapter One. As an example, the First International Congress on Innovations in Nursing, held in Perth in November 2003, focused on linking research, practice and education with the main theme of leadership; there have been two more such congresses held since then, each with a similar emphasis on research. Nursing research activities of the hospital in

which this current study took place, have been the focus of presentations at each of those congresses.

As alluded to earlier, Roberts (1997) found that Australian nurse academics were contributing to conference presentations, whether or not these presentations were specifically about nursing research. However, Roberts found that academics' scholarship was facilitated by participation in research, and this increase in participation could be anticipated as nurse academics gained higher qualifications themselves, and as nursing faculties/schools incorporated the traditional research emphases of other tertiary disciplines. Conference presentations, which may be viewed by beginning researchers as less threatening than writing articles for a peer-reviewed publication, can be used to present preliminary research findings, and gain immediate feedback from colleagues; this is not possible in journal publications. Conference presentations are one medium by which research findings can be delivered to the target group and, for novice researchers, may be a "relatively easy starting point" (Scullion, 2002, p72).

2.5.3 Focused dissemination, local policies

Dissemination of nursing research may proceed through special interest groups and professional organisations. Health care organisations may elect to send several participants, who are likely to introduce change to their practice, to a particular conference. Alternatively, dissemination of information may occur more readily to a specific locale by bringing keynote speakers to the healthcare organisation, as

suggested by Charles (2000, p466). Both these strategies have been used by the hospital where the current research study took place.

Perhaps nurse clinicians find it difficult to access and interpret nursing research. A more active dissemination strategy, which will likely be more effective than publication alone, to demonstrate the value of research evidence and its impact on practice may be to disseminate evidence locally in an appropriate format (Scullion, 2002, p73). As an example of this strategy, one study compared the outcomes on nurses' knowledge from the distribution of a handbook about continence care, which was based upon a systematic review of the evidence (Williams, Crichton, & Roe, 1997). By using a pre-test/post-test design, Williams et al. (1997) demonstrated statistically significant improvement in knowledge resulting from the dissemination of evidence to the experimental group compared to the control group, which did not receive the handbook. The authors acknowledge that dissemination of evidence, even in a user-friendly format, will not necessarily translate into implementation of acquired knowledge into practice, confirming that issues associated with developing a nursing research culture are quite convoluted and complex.

Valente (2003) describes a strategy for improving care at the patient's bedside by the development of user-friendly one-page fact sheets that are based on research. Valente recognised that it can be difficult for nurse clinicians to critically appraise research reports of multiple research studies; and this challenge is exacerbated by the fact that nurse clinicians may be unaware of the research that provides views conflicting with their practice. Thus, research fact sheets were developed to address

clinical issues of concern, with each fact sheet comprising a summary of key concepts arranged around questions, an explanation of the underlying evidence base, and a list of references. The fact sheets are distributed to all nurses, by mail, e-mail and handouts, in addition to being displayed in nursing areas, and are also distributed at the monthly nursing research journal clubs. Evaluation of the fact sheets has been very positive; the information contained within them has been useful in practice and evaluated as leading to improvements in care (Valente, 2003, p120). The organisation provides support to endorse, produce and distribute the fact sheets. The culture of that organisation is one of promoting evidence-based practice and encouraging "research activities that impact nursing care at the bedside" (Valente, 2003, p120). Nursing research is an expectation within positions, and expectations of nurses' involvement in research are reciprocated by the provision of opportunities of research mentorship programs.

The sub-sections within this chapter section highlight the complex nature of dissemination of research findings. Dissemination is inextricably linked with utilisation of research findings, and some authors recommend that more consideration needs to be paid to dissemination strategies at the time of designing a research study. Attention also needs to be given to ways to assist nurse clinicians to ascertain the most worthy research for their use, given a potential for information overload. Organisational support for nursing research is necessary for increasing nurse clinicians' involvement in research, including provision of the time to read research reports.

2.6 Chapter summary

The literature reviewed in this chapter is only a fraction of that retrieved about the topics discussed. However, there are some discernible themes or impressions gained from reading the literature.

- Literature pertaining to nurses utilising research was more prevalent than literature pertaining to nurse clinicians undertaking research in patient-care areas.
- It is evident that there are key figures and key interests. For example, the BARRIERS Scale has been used in repeated studies.
- Whilst the BARRIERS Scale and others like it may be valid and reliable tools, they rely upon self-reports of attitudes. There is no way of knowing if, in fact, these are the real barriers to utilising research in practice as experienced by nurse clinicians. Perhaps nurses respond in ways that they think they should. My personal belief is that respondents more often than not repeat the rhetoric or provide safe answers. Whether or not busy nurse clinicians would choose to engage with nursing research if there was time available is not able to be demonstrated through questionnaires.
- Also, literature that reports the perceptions of Nurse Managers about barriers and facilitators of nursing research in a clinical setting would only be presenting a view removed from the busy work environment of registered nurses in a hospital ward. Any respondent could choose to respond in a positive way so that their workplace would be viewed more favourably.

- The language of barriers is in itself negative, and there is less literature available that investigates factors that should assist nurses to engage with research.
- The link between research and improvements in patient care is difficult to 'prove'. Yet, in the current business focus of outcomes measurement, anecdotal reports may overstate the results of attempts to base nursing practice upon evidence.
- For the nurse clinician, substantial resources to use evidence in their daily practice need to be provided.
- No literature could be found of research using observation that examined the actual involvement of nurse clinicians with nursing research.

However, the literature provided the background to this doctoral study, that explored the involvement of nurses with nursing research, in a facility that has tried to provide some resources for this. The next chapter, Chapter Three, presents a description of the critical ethnography methodology selected for the study.

Chapter 3: Methodology

3.1 Chapter introduction

The purpose of this chapter is to provide a somewhat detailed description of the specific critical ethnography methodology, developed by the educational researcher Phil Carspecken, which I selected to explore my research questions about the nursing research culture within a hospital ward. I endeavoured to remain faithful to this methodology as first outlined by Carspecken in his 1996 book *Critical ethnography in educational research: A theoretical and practical guide*, and as further developed and described in later publications (Carspecken, 1999, 2001, 2004) even though the methodology is, by his own admission, still evolving (Carspecken, 2001, p1). Carspecken developed his methodology because he was convinced of the essential need for a qualitative methodology that would provide an option to the dominant quantitative research methodologies, and that would address the disagreement between qualitative researchers about method and truth.

In this chapter I link the methodology to the research topic in a general way. In the next chapter, Chapter Four, I describe the conduct of the study and identify if, when and why I deviated from Carspecken's methodology. I have considered it important to provide this expanded discussion of Carspecken's approach because I have adapted a research methodology that has been tested within education, to the field of nursing.

3.2 Qualitative research

Many diverse methodologies, including critical ethnography, fit under the umbrella term of 'qualitative research' (Fitzgerald & Field, 2005, p64); and these may be classified by their theoretical perspective or by their research design (Borbasi, Jackson, & Langford, 2004, p129). In general, the focus of all qualitative research is to "understand meanings and interpretations" (Liamputtong & Ezzy, 2005, p16), something that is not achievable in quantitative research (Joel, 2006, p238). The findings from a qualitative research study are to be understood as they relate to the setting and context of the specific research, and hence are unlikely to be generalisable as is the aim in quantitative research (National Health and Medical Research Council, 1995). In addition to this context-specific orientation, features commonly associated with qualitative research methods include: frequent use of multiple data collection methods, researcher involvement, small sample sizes, focus on the participants' perspectives (an emic perspective), use of naturalistic settings, lengthy periods of time in the 'field', and an emergent and flexible design (see, for example, Borbasi et al., 2004; Creswell, 1998; Pope & Mays, 2000; Speziale, 2007a).

It has been claimed that qualitative researchers share some common characteristics (Streubert, 1999). Qualitative researchers acknowledge that all parts of the research process are influenced by personal and professional values and experiences (Gilgun, 2006). They assume that since reality is viewed differently by different people, reality will be viewed differently by participants in the research process. These multiple understandings of reality need to be taken into account because they "create meaning for the individuals studied" (Speziale, 2007a, p21). Qualitative researchers

do not remain independent from the research topic; rather, they interact to varying degrees with the topic and participants, and it is through the researchers that research data are collected and analysed in a qualitative research study (Creswell, 1994, p145).

Qualitative research methods have been deemed appropriate to studies in health care (see, for example, Gilgun, 2006; Pope & Mays, 2000; Roper & Shapira, 2000; Speziale, 2007c). Given the above descriptions of the characteristics of qualitative research and qualitative researchers, a qualitative research design was considered appropriate for this study, primarily because of the dearth of published research, as identified in the preceding literature review, about the actual problems encountered by nurse clinicians who attempt to undertake nursing research in their clinical workplaces and who attempt to incorporate research findings into their practice.

3.2.1 Ethnography

Critical ethnography falls within the broad category of 'ethnography'. Ethnography has been described both as "one form of qualitative enquiry" (Hammersley, 2006, p3) and "a family of methods" (Willis & Trondman, 2000, p5) that helps us to explore how participants see their world in the context of their everyday lives (Liamputtong & Ezzy, 2005, p162). Ethnography, with its origins in the discipline of anthropology (Hammersley, 2006, p4), is distinct within qualitative research because it "attempts to interpret and present its findings from a cultural perspective" (Liamputtong & Ezzy, 2005, p17). According to Spradley, "ethnography is the work of describing a culture" (1980, p3); or as he had expressed in an earlier text, it is a "culture-studying culture" (1979, p9). Germain broadly defined this central concept of culture "as the

learned social behavior or the way of life of a particular group" (1993, p237), and claimed that the aim of all ethnographies is to ascertain "the implicit or latent (backstage) culture in addition to the explicit, public, or manifest (frontstage) aspects of culture" (1993, p245). For example, health care practitioners may be largely unaware of the tacit theoretical foundations to their daily practice (Gilgun, 2006, p439).

Just as there are many types of qualitative research, there are several varieties of ethnography (Speziale, 2007b), with "no standard interpretation of what it is" (Savage, 2000, p1400). The late Clifford Geertz' work represents the anthropological interpretive tradition of ethnography. An interpretive ethnography that follows this anthropological tradition focuses "on the culture of a group, the webs and patterns of meaning that make up a culture and that guide and make sense of people's actions" (Liamputtong & Ezzy, 2005, p16). Geertz (cited in Liamputtong & Ezzy, 2005, p16) claimed that the defining aspect of an ethnography is the intellectual effort of 'thick description' and that was certainly my understanding prior to undertaking this study. Thick description involves the researcher examining both detail and background information, in order to describe "patterns of meaning that inform the actions of people" (Liamputtong & Ezzy, 2005, p16). As a product, an ethnography is never a complete or final description of the culture studied. Rather, "ethnographic studies are always partial and incomplete guesses at explanation" (Liamputtong & Ezzy, 2005, p16), influenced strongly by the relationship established between the researcher and participants (Savage, 2000, p1401).

Ethnography has been described as “both a process and a product” (Agar, 1980, p1). In order to devise thick descriptions of a group of people, ethnographers typically spend long periods of time ‘in the field’, using methods such as participant observation and interviews (Hammersley, 2006, p2). Whilst Germain stated that participant observation and in-depth interviewing are “essential data collection methods” (1993, p239) inherent in the process of an ethnography, Geertz (cited in Liamputtong & Ezzy, 2005, p16) contended that ethnography should not be defined by the techniques used. It is acknowledged that some ethnographers have not used both participant observation and in-depth interviews to collect data; and the degree of participation within the context of observation can vary widely. As the researcher analyses the data collected from fieldwork, additional questions arise, which will most likely require additional observations and interviews (Delamont, 2004). This “cyclic nature of data collection and analysis” (Speziale, 2007b, p200) is generally accepted as a fundamental characteristic of ethnography. The length of time required to be spent in the field varies, with considerably less time spent in observation in some contemporary ethnographies compared with the extensive duration of participant observation in early anthropological ethnographies. Reasons for this reduction in time are many, and may reflect the technology available to collect more detail in a shorter time and the techniques that enable micro-analysis of this information (Hammersley, 2006). It is to be noted, however, that ethnographers have used many data sources other than observation in the field, such as art, documents, clothes, tattoos (Thomas, 1993, p10), and that quantitative data can be collected as part of an ethnography.

As explained in the Preface of the thesis, 'positioning' of the researcher and critical reflection are also significant in an ethnography (Davey & Liefooghe, 2004, p181). Ethnographers' pre-existing understandings, experiences and theoretical traditions will heavily influence what they describe and how they interpret those descriptions (Liamputtong & Ezzy, 2005, p17). An ethnographer may be torn between attempting to maintain a degree of objectivity when describing a culture, while concurrently endeavouring to understand the participants', or emic, perspective of the culture. The associated need for the researcher to be reflexive is another of the fundamental characteristics of ethnography as method. Speziale states that reflexivity is a responsibility of qualitative researchers, and claims that reflexivity "leads to a greater understanding of the dynamics of particular phenomena and relationships found within cultures" (2007b, p203). Given the above description of some of the features of ethnography, it is proposed that researchers who are likely to be drawn towards an ethnographic approach are those people who, according to Germain, 1985, are "interested in learning about culture, willing and able to report data in narrative format, comfortable with ambiguity, able to build trusting relationships, and comfortable working alone" (as cited in Speziale, 2007b, p223).

3.3.1 The development of critical ethnography

Quantz attributes the development of critical ethnography to the efforts, beginning in the 1970s, of researchers at the Centre for Contemporary Cultural Studies at the University of Birmingham in England, that resulted "from an interest in tying theory to reflected experience" (1992, p455). In North America, critical ethnography began to develop from the 1980s (Quantz, 1992, p457), and it is possible the term 'critical

ethnography' was introduced by McLaren in 1989 (Carspecken, 2001, p3). Certainly, Quantz claims that McLaren's *Schooling as a ritual performance,* published in 1986, "is one of the most original ethnographic studies within the critical dialogue" (1992, p460). Carspecken describes how the term 'critical ethnography' was then applied to other "qualitative educational research informed by critical theories of education, such as critical pedagogy theory, feminist theories of education, and neo-Marxist theories of education" (2001, p3). Some research studies produced prior to the creation of the term 'critical ethnography' were subsequently included under the umbrella term. Examples provided by Carspecken include that by Willis (1977), whose classic study, *Learning to labour: How working class kids get working class jobs*, is an example of linking ethnography with Marxist theory; in this instance "to elaborate and develop an understanding of schooling" (Quantz, 1992, p456).

The term 'critical ethnography' was applied initially to research with some distinct common features, such as the value orientation of the researchers, and their analyses of their data. However, these early critical ethnographies lacked clearly-articulated methodological theory (Carspecken, 1999, p32). Carspecken explains that the use of the term 'critical ethnography' became no more tightly defined in the 1990s, claiming that it is "a very loosely defined genre of research. It is a blurred category into which many various qualitative studies linked by vague family resemblances are placed by self-definition" (2001, p4).

3.3.2 The value orientation of 'criticalists'

As alluded to, critical social researchers share a value orientation that includes a "concern for social inequalities" (Carspecken, 1996, p3) and the desire for their work to improve social life. Carspecken has attempted to extend the shared value orientation of criticalists, by constructing "a tight methodological theory" (1996, p3), something that he claimed had been lacking. To use Carspecken's term, "criticalists find contemporary society to be unfair, unequal, and both subtly and overtly oppressive for many people. We do not like it, and we want to change it" (Carspecken, 1996, p7). Since "research is never without interest….[this] effort of critical ethnographers to reveal their own value perspective to the reader may differentiate critical ethnography from other forms [of ethnography]" (Quantz, 1992, p471).

Critical ethnographers "begin their research with the assumption that contemporary societies have systemic inequalities complexly maintained and reproduced by culture" (Carspecken, 2001, p4). Prior to the commencement of a study, critical ethnographers do not assume to know the exact ways by which disempowerment of participants are manifested within the culture, or whether participants acknowledge that they are disempowered (Quantz, 1992, p468). However, a researcher's critical value orientation is likely to influence: the choice of research topic, selection of participants and sites, and how the findings are used.

3.4 Carspecken's critical ethnography methodology

Qualitative researchers prefer to research social action, subjective and reported experiences, and the conditions that influence action and experience more directly than do quantitative researchers. Because qualitative researchers do not construct operational definitions or variables, Carspecken claims that their methodological framework needs to be explicit about social ontology, and to incorporate the "nature of action, experience, and their conditions" (1996, p24). Methodological theories "provide the principles by which to design a research project, develop field techniques, and interpret data" (Carspecken, 1996, p3). Carspecken suggests that we put aside preconceived notions of the meaning of 'critical', as he has tried to develop his own methodology "taking basic issues in all forms of inquiry and showing how they may be treated from a critical perspective" (Carspecken, 1996, p2).

Carspecken's approach to critical ethnography, which he prefers to call 'critical qualitative research', was first described in 1992 (Carspecken & Apple) and later expanded upon (Carspecken, 1996). Carspecken developed his methodology following his initial research project in the 1980s, which "examined the closure and occupation of Croxteth Comprehensive School in Lancashire, England, and the creation of an alternative school run by the 'Community Action Committee'" (Smyth & Holmes, 2006). Carspecken's methodology, developed from within the discipline of education, has been applied in other disciplines, including health (see, for example, Colville, 1999; Cook, 2005; Hardcastle, 2004; Whatman, 2004).

3.4.1 The critical epistemology underlying Carspecken's methodology

One of the strengths of critical epistemology is that it "does not use perception as a root metaphor" (Carspecken, 1996, p16). A reliance on visual perceptions emphasises only one part of an experience, whereas critical epistemology requires that we "understand holistic modes of human experience and their relationships to communicative action" (Carspecken, 1996, p19). Carspecken's methodology "draws upon Habermasian critical theory which escapes the 'crisis of representation' by using a pragmatic theory of truth rather than an empiricist (representational) theory" (Carspecken, 2001, p7). There are important differences between these theoretical approaches. Whereas an empiricist theoretical approach results in knowledge claims that are acts of power, the pragmatic theoretical approach results in fallible truth claims that are able to be challenged. "Identical meaning for the pragmatist is just the absence of possible disagreements or unmet expectations with respect to the use of signs" (Carspecken, 2001, p7). Therefore, "critical epistemology focuses on validity because all truth claims are communicative acts that must meet certain formal conditions to win consent" (Carspecken, 1996, p84). In such an approach, "validity is internal to meaning" (Carspecken, 2001, p7); or as expressed in a later publication, "truth claims are internal to meaning" (Carspecken, 2004, p26).

Carspecken (2001, p8) states that validity and meaning are connected both substantively and epistemologically. Substantively, researchers reconstruct the validity claims of participants to provide information about their cultures, and relationships with a broader social system (Carspecken, 2001, p8).

Epistemologically, Carspecken claims that Habermas' theory of communicative action (Habermas, 1984, 1987) redresses some inadequacies in long-held attempts to explain the interrelationship between validity and meaning. Carspecken has borrowed from Habermas' theory of communicative action in order to describe three ontological categories, each corresponding "to a type of validity claim" (Carspecken, 1996, p84). For Habermas, validity is linked to the full speech act, rather than semantics of individual sentences; and there are three "person to world relations…fundamental to validity claims" (Carspecken, 2001, p8). This contrasts with other long-held views of truth which claimed that there is one view of truth, that of observer to objective world (Carspecken, 2001, p8). The three types of validity claims, as explicated by Habermas are: objective, subjective and normative-evaluative, with objective claims "governed by the principle of multiple access…subjective claims governed by the principle of privileged access [whilst] normative-evaluative claims [are] governed by the principle of position-taking" (Carspecken, 2004, p27).

Habermas' theory of communicative action and consensus theory of truth (Habermas, 1984, 1987) play a pivotal role throughout Carspecken's methodology. Power is central to any theory of truth due to critical epistemology's relationship to communication, and "unequal power distorts truth claims" (Carspecken, 1996, p21). It is essential that critical ethnographers "make every effort to invite the people studied into conversation about the descriptions and analyzes to be produced" (Carspecken, 2001, p9). This is because, epistemologically, critical ethnographies that follow the Carspecken approach use a consensus theory of truth. "Criticalists

examine not whether a statement is true or false but, rather, whether it meets certain validity conditions to win consensus" (Cook, 2005, p134). Critical qualitative researchers need to be alert to very subtle forms of power that may be exercised to reach apparent consensus. According to Carspecken (2001, p10), unequal power relations between researcher and researched can lead the researcher to make distorted validity claims.

3.4.2 An overview of the stages of Carspecken's critical ethnography methodology

This sub-section of the chapter includes a description of Carspecken's terminology, the preliminary steps and the five stages of his critical ethnography methodology, and an explication of aspects of critical qualitative research at the point at which they are most likely to be adopted by a researcher employing this methodology.

Carspecken defines and portrays diagrammatically several terms that he need to be understood by a researcher adopting his methodology. These terms are:

1. *Social site* – A region "within society in which routine activities, usually including interactions, take place….delimited both geographically and temporally" (Carspecken, 1996, p34). The site for my study, the Children's Ward, is one of few wards within the particular hospital that is clearly separate, many of the other wards having no fixed boundaries.
2. *Settings* – "Settings shift when one actor signals the desire to change to a different type of interaction and other actors consent to the change"

(Carspecken, 1996, p35). It is not possible to observe settings directly, but setting changes are clearly seen within interview transcripts.

3. *Locales* – These are geographically broader areas surrounding the selected site. So, for my research, locales could be the adjacent wards, the ground floor of the building, or even the entire hospital.
4. *Social system* – This is action co-ordinated "between groups of actors separated in space and time" (Carspecken, 1996, p36).

Table 3.1 An overview of the stages of Carspecken's critical ethnography methodology

Stage	What it is	Major focus, realm	Methods
One	Compiling the primary record	Objective, 'the world'	Monological data collection – passive observation in naturalistic settings; and recording of observations, e.g. by field notes, audiotapes, videotapes
Two	Preliminary reconstructive analysis	Normative-evaluative, 'our world'	Reconstruction of cultural milieu "norms, values, and beliefs of the people being studied".[2] Is repeated after stage three
Three	Dialogical data generation	Subjective, 'my world'; Normative, 'our world'	Interviews, group discussions. "Democratizes the research process"[3] because this stage "allows the people under study some control over the research process".[4]
Four	Describing system relations	Relationships between selected site and other related sites	Compare cultural reconstructions from related sites
Five	System relations as explanations of findings	Relate findings to "theoretical models of society".[5]	"Link reconstructive analysis with system theories".[6]

[2] Carspecken, 1996, p52
[3] Carspecken, 1996, p42
[4] Carspecken, 1996, p53
[5] Carspecken & Apple, 1992, p548
[6] Carspecken, 1996, p43

3.4.3 Preliminary steps

The preliminary steps are concerned with generating broad research questions, ascertaining the type of information that may be needed to answer those questions, and preparing to gain access to the field. The first preliminary step is to write down the topics of interest and research questions, which "should be general, broad, comprehensive, and able to be modified as the research progresses" (Smyth & Holmes, 2005, p67). Some of the host of questions at this preliminary phase of my study were:

- When and how do nurses access evidence and research applicable to their practice?
- What research literature do nurses in a given ward choose to search for?
- What are the nurses' attitudes towards nursing research?
- What do the nurses do with research articles and literature of relevance to their clinical area that they come across?
- How do nurses decide what research to implement in practice?
- What prompts some nurses to select certain research findings to implement in practice and to ignore other findings?
- Do nurses choose to measure the impact on patient outcomes from the implementation of research findings?
- What factors are the most influential for developing a nursing research culture, and why do nurses perceive these as the most important?
- What is happening at the ward level that leads to apparent uneven uptake of offers of assistance and other resources required for research?

- What barriers have nurses encountered if they have tried to change their clinical practice in response to research evidence?
- Do the nurses operationalise the nursing services' espoused value of research, or do they only pay lip service to it?
- Why does it seem so difficult to incorporate nursing research into nursing practice?

The information required to answer the questions of interest may be diverse, and come from correspondingly diverse sources. At this preliminary phase, prior to commencing the study, I expected that I would need to acquire information, for example, about:

- Routines of the ward
- Accessibility of research literature
- Access to computers
- Nurses' research appraisal skills
- Nurses' prior involvement with research
- Nurses' acceptance of research and their attitudes towards research
- Resources provided to assist nurses to engage with nursing research
- Previous attempts to introduce practice changes based upon research evidence
- Resource provision and resource constraints, and
- The ward's strategic plans.

The third preliminary step requires researchers to examine their value orientations, perhaps by exploring their own biases and expectations with an experienced

qualitative researcher (Smyth & Holmes, 2006). My sensitivity to my own biases was enhanced through reading about and reflecting on the critical ethnography methodology, and by discussing with my Supervisor what I expected to find. By exploring value orientations, prior to commencing fieldwork, "the researcher can then check for these biases, and for adherence to their aims, as they compile field notes and reformulate research questions" (Smyth & Holmes, 2005, p68). I recognise that my family, educational and work experiences shaped my expectations, and that I came to this research from a somewhat privileged position. Some of those preliminary reflections were discussed in the Preface and this critical reflection was continued throughout the stages of the study.

3.4.4 Stage one – compiling the primary record through the collection of monological data

This first stage of Carspecken's (1996) methodology involves relatively passive observations in the field, thick descriptions of those observations in the researcher's primary record, and the recording of more general notes in the researcher's field journal. Researchers employing all of Carspecken's stages will need to return to the primary record for detailed analysis, and his very specific suggestions as to how to capture the "components and qualities of thick description" (1996, p47) are:

1. Describe facial expressions, body movements and postures; record speech acts, preferably by the use of audiotapes to capture verbatim speech
2. Use a low-inference vocabulary
3. Note and record the time frequently

4. Use brackets to note your comments as ‘observer comment’
5. Describe the context prior to starting the thick description
6. Italicise verbatim speech
7. Type the thick descriptions into a word processor file, especially in the early periods of observation, to heighten your awareness of frequently-occurring events
8. Use a diagram if it assists with the thick description.

The examples of stage one descriptions provided by Carspecken (1996) are indeed ‘thick’. He suggests selecting some periods for intense observation and at other times to record ‘quite thick’ descriptions in the field notes. Whereas the field journal notes do not need to be as precise or detailed as does the primary record, Carspecken urges researchers to adopt, whenever possible, standards similar to those used for thick description when recording field notes, thereby working towards the ideal for “meeting validity requirements of objectivity” (1996, p48). It may be possible to record some exact quotations. Additional techniques that can help to support the researcher’s objective validity claims for stage one are: prolonged engagement in the field with a flexible observation schedule, the use of multiple recording devices and observers, peer-debriefing and member checks (Carspecken, 1996, pp88-89). The use of some of these techniques during this critical ethnography is described in Chapter Four, when the conduct of the study is explained.

The degree of involvement of the researcher who employs observation as a data collection method can vary considerably, from the so-called ‘non-participant’ stance

to the 'complete participant' role (Bailey, 1996, p10; Tham, 2003, p184). Carspecken advises researchers who adopt his critical ethnography methodology to adopt passive observation, at least in the initial phases. Those being observed may at first modify their behaviour when the researcher is present, but as they become familiar with the researcher's presence they will continue with their more usual behaviour. Researchers who employ critical ethnography are interested in actions and the conditions in which those actions take place; if behaviour has changed when the researcher is present, then it is important to understand how it has changed, not merely that it has changed. If a researcher has produced thick descriptions of the usual behaviours without full engagement with participants, then it will be possible to analyse changes at a later stage when there is greater engagement of the researcher with the participants.

Carspecken prioritises his observations during this initial phase of passive observation. He will select one person to observe for approximately five minutes, focusing first on recording everything about the selected individual using his techniques of thick description; secondly, on the other people who interact with the selected person; and thirdly, Carspecken notes what is taking place around the person of interest at the time. Then he will repeat this method of observation with another person who he selects as being important to his study at the time. The same technique of prioritising observations can be applied to groups of people. He suggests that once the people have been the focus of initial observations, the researcher can concentrate on categories of behaviour. Using a flexible observation schedule "to disrupt the tendency for unnoticed biases to guide composition of the

primary record" (Carspecken, 1996, p48), researchers are advised by Carspecken to observe for no longer than two hours at a time. An observation schedule, such as that advocated by Carspecken, will enable the researcher to "claim that certain kinds of events occur often and other kinds of events rarely" (Carspecken, 1996, p91). Both of these types of interactions will need to be reconstructed in later phases of the research.

'Prolonged engagement', a term attributed to Lincoln and Guba (1985), is another technique that will support the researcher's validity claims (Carspecken, 1996, p88). Initially, researchers draw upon their own cultural backgrounds when attempting to reconstruct meaning. Then, as researchers spend a prolonged time in the field, they will be able to begin to take the position of the participants when trying to reconstruct and understand meaning. The critical ethnographer adopts a hermeneutic-reconstructive method "to articulate the themes of a cultural group" (Carspecken, 2001, p11). Long engagement with the participants will assist the researcher to identify routine meaningful acts and shared values, norms, repertoires and beliefs. Then it will be possible to identify and analyse actions that are not routine. Likewise, through prolonged engagement, researchers will notice words and semantic units that hold special meanings and are used frequently, and the researcher will need to understand the significance of those semantic structures (Carspecken, 2001, p13). Researchers may well return to stage one later in the study if they determine that there is a need to go back to the site for additional focused observation periods.

3.4.5 Stage two – preliminary reconstructive analysis

The reconstructive analysis methods of stage two, introduced as a separate stage in Carspecken's methodology, are used throughout a critical qualitative study from this point onwards. Although Carspecken introduces the techniques of reconstructive analysis in a sequential manner, he cautions that researchers need to understand his entire conceptual model before they commence any single step of reconstructive analysis. The procedures that Carspecken describes in this stage are to be used cyclically, and researchers can use them in the order that most suits their studies. He also encourages researchers to use the conceptual models and techniques in new ways. "Reconstructive analysis is at heart a creative endeavour, akin to the creativity involved each time we understand people in everyday life" (Carspecken, 1996, p94). The components of initial reconstructive analysis are: low-level coding and meaning fields, and higher-level inferences with horizon analysis.

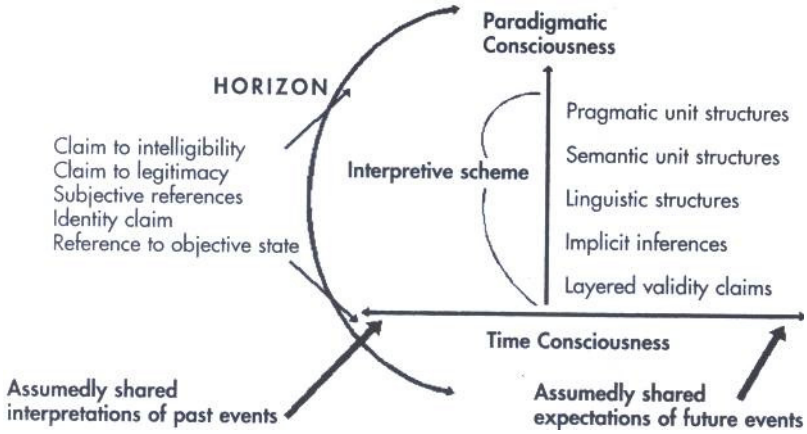
The concept that assists the critical ethnographer to understand the meaning of action is the 'meaning field' (Carspecken, 2001, p12). With reference back to the primary record, the researcher aims to put "words onto the actions observed, as if the actor had tried to convey the entire meaning of her act verbally rather than through the complexities of vocal tone, posture, gesture, facial expression, timing, prosodic form, and so on" (Carspecken, 1996, p97). Construction and articulation of meaning fields employ a hermeneutic process, that is intersubjective, requiring the researcher to take the positions of all those involved in an act. The researcher needs to "move through the various positions in a conscious and explicit manner rather than in the tacit and implicit manner typical of everyday interactions" (Carspecken, 1996, p99). Position-

taking relies upon "cultural generations and typifications" (Carspecken, 1996, p99). "Becoming clear, through reflection, of our own typifications employed in recognizing possible meanings will involve becoming clear on the cultural norms employed" (Carspecken, 1996, p100). Carspecken calls this part of the hermeneutic process, 'normative reflection'.

'Validity reconstructions' and 'horizon analysis' build upon the constructed meaning fields (Carspecken, 1996, p102). Carspecken's concept of pragmatic horizon analysis is sophisticated and introduces additional terminology with which researchers employing his methodology also need to become acquainted. Carspecken borrowed 'horizon' from phenomenology, and relocated it within a Habermasian pragmatic theory of meaning to produce the term 'pragmatic horizon analysis'. "The idea of pragmatic horizons comes from regarding action, rather than perceptions, to be most primary in experience" (Carspecken, 1996, p103). Carspecken has illustrated the complex nature of pragmatic horizon analysis diagrammatically (refer to Figure 3.1, the diagram from Carspecken's 1996 text). Although this diagram has subsequently been modified (Carspecken, 2005), the concepts remain similar. There are five categories of reference and claim within this pragmatic horizon, as listed on the left-hand side of the figure: a claim to intelligibility, claim to legitimacy, claim to a subjective state of the actor, identity claim, and claim to existence of an objective state of affairs (Carspecken, 1996, p104). Each of these claims has different levels of backgrounding and foregrounding within a meaningful act.

Figure 3.1 Pragmatic horizons with paradigmatic and temporal dimensions

(Carspecken, 1996, p111)



The pragmatic horizon has two axes: the 'temporal axis', and the 'paradigmatic axis' of which the validity claims are part. The two axes, temporal and paradigmatic, of the pragmatic horizon "work together in the generation of interactive sequences and patterns" (Carspecken, 2001, p17). The temporal axis refers not to actual time, but to 'time-consciousness' on the part of the participant (actor), while the paradigmatic axis "pertains to such things as roles and role-sets, pragmatic metaphors, and pragmatic allusions" (Carspecken, 2001, p17). The temporal axis is necessary because "all acts of meaning are contextual" (Carspecken, 1996, p106), related to what has gone before and what is expected to happen. Therefore, "the meaning of any particular act will depend in part on its location within a stream of interaction: thus a syntax" (Carspecken, 1996, p106). Hence, I considered that the periods of observation would help to provide this temporality.

Semantic units are one component of the intersubjective scheme of the paradigmatic horizon. Carspecken criticises Spradley and similar ethnographic authors who believe that semantic units have fixed meanings, claiming instead that semantic units are "intersubjectively constituted categories of meaning that are relatively stable, but not absolutely fixed, within cultural life" (1996, p107). Words may have special meaning and relevance to certain groups, or cultures, and may "codify many complicated features of a general cultural view" (Carspecken, 2001, p18). Also, by carefully analysing semantic and pragmatic structures, researchers may be able to reconstruct the multiple discourses that participants draw upon in their everyday lives.

Pragmatic meaning units, another component of the paradigmatic axis, are not semantic units. "They have a unit characteristic because they are understood in a singular manner, but they are understood on tacit levels rather than on symbolic levels" (Carspecken, 1996, p109). Examples of pragmatic meaning units include people acting out roles, or engaging in games. According to Carspecken, "pragmatic and semantic structures are often easily recognized as distinctive of a cultural group and therefore an analysis of them will capture widespread features of a particular culture" (Carspecken, 2001, p16).

Meaning reconstruction, the focus of stage two, includes exploring the tacit objective, subjective and normative-evaluative validity claims "routinely employed in the construction of meaningful acts" (Carspecken, 1996, p110). Whereas the earlier-mentioned concept of analysing the degree of foregrounding/backgrounding of claims forms the 'vertical analysis', articulating the three categories of validity

claims forms the 'horizontal analysis' of the pragmatic horizon. When undertaking validity reconstructions, the researcher attempts to make the components of meaning explicit, by explaining the reasons that the actors give for their actions and expressions. The "reasons will generally fall into the three categories of objective, subjective, and normative-evaluative truth claims" (Carspecken, 1996, p111). With reference to Habermas, Carspecken states that "validity is internally connected to meaning: one understands validity claims, often tacitly, as soon as one understands meaning" (1996, p111). Some special uses of validity reconstructions described by Carspecken include analysing changes in settings, and how backgrounded claims may become more foregrounded during interactions.

Another "very effective way to find core themes within a culture or personality" (Carspecken, 2001, p16) is to reconstruct identity (existence) claims.

> Meaning is an embodied phenomena, always with correlates in 1st person body sensations. Those sensations are related to the holistic grasp we have of the meaning of our acts before, during and after they are expressed and the holistic grasp we obtain of meaning when experiencing or observing the acts of others. (Carspecken, 2001, p20)

An understanding of this bodily basis to meaning can enhance data analysis. Thus it is important for critical ethnographers to be alert to their own bodily sensations and the "body sensations of others as revealed by body posture, facial expression, and gesture" (Carspecken, 2001, p20). Carspecken explains that the analysis of, say, body postures and gestures can reveal aspects of power in the interaction, and he

strongly suggests that researchers refer to work by others such as McLaren, about the relationships between power, meaning and bodily states (Carspecken, 1996, p128).

The pragmatic horizon model can also be used to analyse 'secondary concepts of interaction' as part of the meaning reconstructions of stage two. Carspecken conceives of roles differently to how they are more commonly described in sociological literature; he views roles as being much more important to meaning than to refer to them in the third person as is usually done in role theory literature. Rather than defining roles according to their functions, Carspecken defines roles according to their meaning and adopts a first- and second-person perspective rather than a third-person position. By doing this, he claims that subtleties of roles will become apparent and that it is best to describe roles with phrases rather than single words (Carspecken, 1996, p139).

Carspecken places considerable emphasis on the validity requirements for each stage of his methodology. Whereas stage one was primarily concerned with the objective realm, stage two is primarily concerned with reconstructing the normative-evaluative ontological category, although subjective states as displayed through body postures are also partly reconstructed in this stage. Procedures that researchers can use to support the validity claims related to these reconstructions are: the use of stage-three procedures, member checks of reconstructions, peer debriefing, prolonged engagement as recommended in the first stage, strip analysis and negative case analysis (Carspecken, 1996, p141).

When he detailed his theory and methods in 1996, Carspecken claimed that coding should not commence until the primary record is almost completed. More recently, he has revised his position and has stated that coding can commence much earlier in the research process (Carspecken, 2005). Low-level coding requiring minimal abstraction is applied to the primary record that was produced during stage one. Higher-level coding requiring more abstraction is reserved until the dialogically-generated data of stage three are obtained; high-level codes are "generally based on explicit meaning reconstructions and horizon analysis" (Carspecken, 1996, p148).

3.4.6 Stage three – dialogical data generation through interviews, group discussion and interpersonal process recall

This third stage commences after the initial meaning reconstructions of stage two, and is primarily concerned with subjective truth claims, ascertained through interviews and group discussion. Although Carspecken declares that the researcher can move back and forth between stages, it is likely that routine behaviours in the site of interest will change once interviews or group discussions take place, and the researcher will need to be aware of how they have changed (Carspecken, 1996, p154).

Although it is implicit within Carspecken's methodology that the researcher should endeavour to interview people with different perspectives, he provides little specific guidance to the researcher about the selection of participants to be interviewed. The choice of informants in an ethnography can be made according to predetermined criteria (theory-driven approach), and/or the choice can be made as the data are

obtained (data-driven approach). It is likely that these people will be "selected on the basis of their attributes, such as access to certain kinds of information or knowledge that itself may be a function of such things as social status, position in an organization, or comprehension of cultural knowledge" (Johnson, 1990, p10). Individual qualities of informants such as articulateness, story-telling ability and willingness to be interviewed, are also important. It may well be important to include informants "whose experiences appear to contrast with and contradict qualities of other informants" (Gilgun, 2006, p441). Ethnographers have also found that luck can play a part in selection of informants; and those informants can be particularly valuable to a study if they hold certain positions in the particular society (see, for example, Carspecken, 1991; Whyte, 1943). The critical ethnographer may need to strike a balance, when selecting potential informants, between the individuals' perspectives in the study and their willingness to participate. In my study, the informants needed to consent to the interview, and they needed to be able to give of their time either within or outside of a working shift. Prior to commencing the study, it was anticipated that approximately six staff, representative of different levels and viewpoints, would be interviewed.

Researchers are advised by Carspecken to commence each semi-structured interview with a couple of concrete questions, which should, where possible, reflect information previously recorded in the primary record in stage one, and open up a 'topic domain' that the interviewer wants to explore further. Carspecken suggests a four-item structure to a written interview protocol, with lead-off questions for each topic domain, covert categories that the researcher will want the participants to

address without asking them explicitly to do so, and possible follow-up questions for each domain (Carspecken, 1996, p157).

Carspecken (1996, p155) claimed that there was little written about the types of interviewer responses appropriate to qualitative interviewing, and he views these responses as more important than the actual wording of the questions. To address this, Carspecken has developed a typology of interviewer responses based on Norman Kagan's work (see, for example, Kagan & Kagan, 1991), which describes the types of responses, and when and how often to use them. The types of researcher responses that Carspecken describes are: "bland encouragements; low-inference, medium-inference and high-inference paraphrasing; nonleading leads; and active listening" (Smyth & Holmes, 2005, p71). For example, facial expressions that convey that the researcher is interested in what is being said will encourage the participant to continue talking; and this type of response will most likely be used extensively throughout the interview, but more particularly at the beginning when developing trust with the participant. Once the interview is well underway, the researcher may choose to be more direct, and use 'medium-level paraphrasing' to articulate the participant's apparent "implicit beliefs and theories" (Carspecken, 1996, p160).

Researchers who use Carspecken's methodology will apply pragmatic horizon analysis, as previously explained, to the dialogical data, and perhaps add the use of narrative-analytical techniques to incorporate the 'contextual nature' of interview data (Carspecken, 1996, p162). The coding of interview data proceeds at a high level,

in contrast to the low-level coding used on the observational data collected during stage one. The strongest conclusions drawn from a study will show consistency between observational data and the interview data.

Since interviews bring the researcher into a world of privileged access, they presuppose the honesty and accuracy of the subjects (participants). Carspecken details procedures that researchers should try to use to support subjective validity claims, which are the focus of stage three. These procedures are: conduct consistency checks on the recorded interviews; re-interview the informants; check for consistency between the observed activity and what is said during interviews; use non-leading interview techniques and ask peer debriefers to check for possible leading questions; invite those interviewed to comment upon the reconstructions from the interviews and fieldnotes; and adopt the language of the interviewees and encourage them to use and explain their normal forms of expression (Smyth & Holmes, 2005, p71).

3.4.7 Stages four and five – systems analysis

Carspecken is considerably less prescriptive about the methods to be used in stages four and five than he is with respect to the preceding stages. Carspecken's methodology uses the critical nature of "the epistemological principles and substantive concepts they are based upon" (Carspecken, 2001, p21), to conduct a systems analysis once the culture, or 'lifeworld' in Habermasian terms, has been reconstructed. Culture, according to the Habermasian perspective, "explains routine activities through the articulation of action orientations" (Carspecken, 2001, p22).

Carspecken lists the questions that can then be asked; and how the answers can be found. The questions to be asked are:

> Why do these particular cultural themes exist?...
>
> How is this cultural formation related to other cultural formations on different social sites?...
>
> What functions do the action consequences encouraged by this cultural formation serve within a larger social network? (Carspecken, 2001, p22)

Thus, in stage four, the researcher may need to engage in additional fieldwork, in sites other than the one frequented in stage one. This will depend upon the suspected origins of the cultural themes that arise from the researcher's reconstructions of stages one to three. The additional fieldwork will rarely require such thick descriptions as obtained for the primary record, but the researcher will need to look for similarities between the reconstructive analyses of the related sites with the reconstructions of the original site. To complete stage four analysis, the researcher needs to develop the evidence that there is a system, and "that routine activities on one site influence those on another" (Carspecken, 1996, p198). In order to validate their stage four analysis, researchers need to impose similar validity requirements as in the preceding three stages. Researchers may choose to invite participants from the earlier stages to comment upon the reconstructions, and then look for matches between the participants' comments and the reconstructions.

Systems analysis, like identity claims and meaningful action, "is an open field for new work and new discoveries" (Carspecken, 2001, p22). The researcher is

encouraged to be creative, provided consistency with the critical epistemology is maintained, and it has been suggested that "a critical discourse analysis could be implicit within Carspecken's (1996) approach" (Cook, 2005, p133). The primary units of analysis in stage four, the site and cultural group, are both "empirically immediate" (Carspecken, 1996, p197). "Site relationships may include those based on the actual physical movement of people or on cultural commodities and political documents" (Carspecken, 1996, p197). Gender is one example of a cultural grouping that can be important to consider during this fourth stage.

Whereas stage four is focused on sites related to the site under study (such as other hospital areas), stage five goes much further and the researcher uses 'social-theoretical models', taking care not to select overly mechanistic or simplistic theories, to explain and even to alter or refine existing system theories (Carspecken, 1996, p195). He provides guidance as to the type of theory to be selected, "to build a systems analysis from the experiences and cultural terms" (Carspecken, 1996, p206) of the participants in the research.

3.5 Power and the stages of the critical ethnography

As would be expected, Carspecken discusses the effects of power throughout the stages of his critical ethnographic methodology. Because critical researchers aspire to equality of power relations, Carspecken strongly advocates that the researcher strives to undertake democratic research by attaining an insider's perspective of the cultural group being studied, and for the research participants gaining an "insider's view of researcher culture" (Carspecken, 1996, p207). He reminds us that "morally,

social research will either hurt or help people: it rarely has purely neutral effects with respect to human welfare" (Carspecken, 1996, p207). The best way to do this, according to Carspecken, is to make research "as democratic as possible, from start to finish" (1996, p207).

It is easier for researchers to reduce distortions of power on their objective claims than on their subjective and normative-evaluative claims. Three strategies, useful to researchers for reducing any distortions of power during stage one, are: defer to participants' perceptions when constructing the primary record, include conflicting accounts of an event in the primary record, and encourage participants to question the researcher's perceptions by establishing "supportive, non-authoritative relationships" (Carspecken, 1996, p90) with them. Strategies to reduce the distorting effects of power on the normative-evaluative inferences, such as those elucidated in stage two, include asking participants to question the researcher's reconstructions, and assuming equal power relations between the participants and researcher as much as is possible, to approximate the 'ideal speech situation' proposed by Habermas (Carspecken, 1996, p142).

Carspecken discussed 'interactive power' in the context of stage two. Drawing on the work of Giddens, Carspecken states that "all acts are acts of power" (1996, p128), but they vary in degree of power. Interactive power, according to Carspecken, occurs when there are unequal communicative inputs from those involved. Carspecken's typology of interactive power, an adaptation of the work of Weber, comprises four subtypes:

- Normative, in which subordinates consent to the exercise of power by superordinates through cultural norms;
- Coercive, in which the subordinate resists, or at least does not consent to, the power of superordinates;
- Contractual, in which subordinate cooperate in return for rewards; and
- Charm, which relies upon the personality of the superordinate. (Smyth & Holmes, 2005, pp69-70)

When reviewing their field notes, researchers should be alert to instances and the types of interactive power; and then analyse the commonly employed types of interactive power. For example, identify: norms used in cases of normative power, sanctions threatened in cases of coercive power, or implied values if contracts are frequently used (Carspecken, 1996, p131). This is important in a critical ethnography because "cultural power penetrates to the very identity of people, and where it works its effects one will always find pain" (Carspecken, 1996, p136). In order to identify 'cultural power', the researcher engages in the hermeneutic process, "a process of recognizing meaning in new contexts and configurations" (Carspecken, 1996, p131). Interactive power should also be examined in the context of the cultural milieu, and Carspecken suggests that often the forms that interactive power takes will be related to the cultural contexts.

3.6 Interpretation and chapter summary

In this chapter I have described in considerable detail the particular form of critical ethnography methodology that I employed in my study. This degree of explanation

was necessary because it is a very specific methodology, attributable to one author, and readers of this thesis may not be aware of its detail although they may be familiar with conventional ethnography. The critical ethnography methodology provided me with a framework with which to begin to examine the tension "between control and resistance…[as] reflected in behavior, interaction rituals, normative systems, and social structure" (Thomas, 1993, p9), in the context of an exploration of the nursing research culture of a group of nurses. Critical ethnography has its foundation in critical theory, which is "a reflective theory which gives agents a kind of knowledge inherently productive of enlightenment and emancipation" (Geuss, 1981, p2). I began the study conscious and respectful of the premise of critical theory to strive toward a more rational society.

Whilst a significant portion of my work role is devoted to assisting nurses to fulfil the nursing research accountabilities within their position descriptions, unfortunately a sizeable portion of my time and effort is consumed with actively following up specific nurses who do not comply with those requirements. The intent to establish a nursing research culture within this workplace is a change that is largely, despite the rhetoric, 'imposed' downwards from senior management; such a change has certainly not been met with enthusiasm by many nurse clinicians. I was aware, prior to commencing this study, that there were power imbalances and inequities in the system in relation to attempts to establish a nursing research culture. Critical ethnography, with its foundation of critical theory, gave me the opportunity to examine and reflect on the processes and consequences of this pressure to change, not just from the perspectives of the nurse clinicians, but also from the perspective of

nursing management, of which I am part. I began the study hoping that some of the nurse participants might see some inequities revealed, and contribute some strategies to address oppressive forces; and I certainly expected that the subtle and not-so-subtle oppressive forces would become clearer to me from my somewhat privileged position as the researcher. I expected that during the course of the study, I, too would be somewhat unsettled by what I was experiencing and critiquing. I began the study, aware that "if the practice of critical ethnography is truly dialogic, culturally active, and ethnically representative, then that practice necessarily implies real change in the self-conception of the ethnographer" (Brooke & Hogg, 2004, p117).

Perhaps some of the most relevant points to me of Carspecken's methodology, as I have explained in this chapter, were the following:

- He advocates that his critical methodology be used by all researchers, not just by criticalists, who "share a distinctive, critical, value orientation" (Carspecken, 1996, p6).
- The staged nature of Carspecken's approach gave me considerable guidance and confidence as a novice researcher when first starting this research study.
- I was interested in applying his methodology to a study in nursing.
- I viewed the ways in which Carspecken incorporated strategies to minimise distortions of power into his methodology, and his techniques to represent validity claims pertaining to the three ontological worlds, as strengths to his approach.
- Carspecken's methodology clearly includes strategies to conduct research in a democratic way.

- I was hopeful that my study would, in some small way at the very least, present the voice of those who rarely have such an opportunity.
- Habermas' concepts relating to communicative action and truth are incorporated in Carspecken's methodology.

In the next chapter, Chapter Four, I describe how I applied Carspecken's methodology to the conduct of the study. There were aspects of his methodology that required adaptation to my particular study, and at times it was necessary to incorporate information additional to his methodology. Later in the thesis, the study's findings are interpreted from a critical theory standpoint.

Chapter 4: Conduct of the study

4.1 Chapter introduction

This chapter describes how the research proceeded and relates the actual conduct of the study to Carspecken's methodology. It has been difficult to write in a seemingly linear fashion about what were essentially non-linear interconnected processes that unfolded over a considerable period of time. This chapter includes the following:

- A restatement of the aims of the study
- Information about how the site for fieldwork was selected
- Ethical considerations of most relevance during the conduct of the study, including gaining access to the site
- The fieldwork process, and
- The process of interviews with key informants as part of the stage of dialogical data generation.

The unexpected opportunity to add video-recording as a method of data collection to support the data obtained during fieldwork, suggested by Carspecken himself, is also discussed.

4.2 Aims of the study, research questions

This critical ethnography is about the extent to which a nursing research culture was evident in a selected hospital ward, and about what hindered or assisted attempts to develop such a culture. I was interested in ascertaining whether nurses routinely

engaged with nursing research in some way, either by being involved in the conduct of nursing research or in the implementation of findings of (nursing) research into their practice. The specific accountabilities associated with research at all levels of nursing are itemised within nurses' position descriptions. However, these research accountabilities are often viewed as 'add-ons' to the 'real' work of nurses, and disregarded in favour of other accountabilities that are viewed as more important. The Clinical Nurses, designated at 'Nursing Officer Two' (NO2) level, are expected to undertake a small action-based research project annually; this expectation had been in place for two years prior to the commencement of this study, with varying degrees of compliance. The frustrations that arose from the researcher's work role as Nurse Manager–Research, associated with the apparent lack of consistent success in trying to encourage and support nurses to engage with nursing research, led to many of the research questions driving this study.

As noted previously, I began with a few broad questions and areas of interest. As presented in Chapter Three, some of my questions at this preliminary phase of my study were:

- What research literature do nurses in the Children's Ward choose to search for?
- What are the nurses' attitudes towards nursing research?
- What do the nurses do with research articles and literature of relevance to their clinical area that they come across?
- When and how do nurses access evidence and research applicable to their practice?

- How do nurses decide what research to implement in practice?
- What prompts some nurses to select certain research findings to implement in practice and to ignore other findings?
- Do nurses choose to measure the impact on patient outcomes from the implementation of research findings?
- What factors are the most influential for developing a nursing research culture, and why do nurses perceive these as the most important?
- What is happening at the ward level that leads to apparent uneven uptake of offers of assistance and other resources required for research?
- What barriers have nurses encountered if they have tried to change their clinical practice in response to research evidence?
- Do the nurses operationalise the Nursing Services' espoused value of research, or do they only pay lip service to it?
- Why does it seem so difficult to incorporate nursing research into nursing practice?

These questions were modified and new questions arose as the study progressed. This is consistent with the emergent design of qualitative research in general (Creswell, 1994, p71) and with the selected methodology in particular (Carspecken, 1996, p41). The conceptualisation of the study, the topic and research questions, and the procedures adopted to collect data, reflected my value orientations and experience, and it is acknowledged that other interpretations of the data could be made. As with all ethnographies, the intention was to concentrate on one site at a selected time, and it was not the aim to generate generalisable findings. However, it

is anticipated that some aspects that arise from the analysis will provide insights in relation to other situations or other groups of nurses. Importantly, the use of critical ethnography is reflective of my interest in the issues of power and oppression, and a belief that it is possible to strive toward a more rational and equitable society.

4.3 Selection of the site

The site chosen for this study was the Children's Ward within a large regional hospital in northern Queensland, Australia. I had several reasons for selecting this particular site. Automatic swipe card access to the ward, through two entrances at one end of the ward, is restricted to certain staff members; all other visitors, staff or non-staff, are required to request access by pressing the bell at one of those entrances, which is under camera surveillance. Therefore, it is possible to know who enters and leaves the ward; and this attribute of a bounded area sits well with the selected methodology. I had little detailed knowledge of the Children's Ward, having only been there on a couple of occasions prior to the commencement of the study. Additionally, I only had prior specific contact with approximately seven of the Children's Ward nurses, in relation to their nursing research projects. I had assisted four of the nurses to write ethics submissions pertaining to two nursing research projects, and had acted as the interviewer for one of those projects. I was aware from my work role that the nurses had variable levels of knowledge and skill with regard to research, and that the nurses, in particular those at Clinical Nurse level, had demonstrated variable levels of commitment to their research accountabilities. In the initial years following the introduction of action-based research into the Clinical Nurse position description, prior to the commencement of this study, the Children's

Ward had been one hospital unit that had allocated off-line time for nurses to work on their projects. Hence, most of the Clinical Nurses had completed some small projects of relevance to their nursing interests and practice; this contrasted with a poorer completion rate in several other hospital units. I was not involved with the ward on any other major projects, as was the case with some of the other units in the hospital. I also believed, perhaps naively, that it might prove beneficial for future patient outcomes if nurses caring for children were actively involved with using research in their practice. This same sentiment was acknowledged by one of the nurses during an informal discussion that took place when I was planning the project.

I knew before commencing the study that the Children's Ward caters for a diversity of children, with respect to diagnoses, age and length of hospital stay. Children aged from one month to early teens are admitted for surgery or for treatment of medical conditions. These admissions can be planned, or unplanned as a result of an emergency. Children were admitted to the ward even if they were undergoing day-stay surgery; in those cases they were not cared for postoperatively in the Day Surgery Unit as adults would have been. Some children only stay in hospital overnight; other children require readmissions over lengthy time periods. The ward has a degree of 'specialty' focus, but it is also one ward amongst many within a general hospital.

4.3.1 Gaining research access

Access to the selected ward as the research site was obtained by following the health service's policies about the conduct of research within its facilities and research that

involved its staff. Initially, I discussed the study's plan, purpose and logistics with the District Director of Nursing, who was fully supportive of the project. When the selection of the ward was finalised, I met with the Operations (Nursing) Director of the relevant Institute and explained my proposal. On her approval and recommendation, I then approached the most senior nurses on the Children's Ward at the time, and discussed the proposed study with them. They were helpful, and organised the appropriate opportunities for me to discuss the study with the nurses from the ward once the ethics approvals were obtained and I was ready to proceed. Thus, provisional permission to use Children's Ward as the site for this critical ethnography was unproblematic.

4.4 Responding to ethical concerns

Ethics approval was sought and gained from both the Health Service District's Institutional Ethics Committee (Protocol number 67/03) and the University's Human Ethics Sub-Committee (Ethics approval number H1717). Both committees act in accordance with the expectations and requirements of the National Health and Medical Research Council (NHMRC). Such committees exist to protect the welfare and rights of participants in research, as per the NHMRC's *National Statement on Ethical Conduct in Humans* (1999). The Chairman of the health service's committee requested additional information related to some aspects of the ethics submission prior to the granting of approval. The principal concerns were: a possible 'Hawthorne Effect'; and the potential conflict between my researcher and work roles, which could lead to the perception that nurses would feel some subtle coercion to

participate in the study. These concerns are present in relation to many research methodologies and designs.

In respect of the Hawthorne Effect, it may be that behavioural changes resulting from the presence of the researcher are not sustained over time and, as Wolcott states, "sooner or later things will get back to normal" (1995, p83). I proposed to the Ethics Committee that strategies such as varying the day and times of the observation periods as recommended by Carspecken (1996), and adopting non-intrusive or minimally intrusive observation methods when possible (Kellehear, 1993), could be useful in minimising the Hawthorne effect. Indeed, on my third visit to the ward, a nurse remarked that she thought I would probably blend in and "people would forget I was there" (*field notes, 11-08-2004*). However, critical ethnography facilitates changes, and the researcher uses the fact that they are part of this change constructively. The selected methodology incorporates the acceptance that people's behaviour will change when they are being observed, and that it is important for the researcher to understand in what way it has changed rather than trying to ignore or minimise any change (Carspecken, 1996, p52).

4.4.1 Managing potential conflict between researcher and work roles

Some strategies that I implemented to manage the potential risk of coercing potential participants were:

- Adoption of a well-recognised critical ethnographic research approach, with a strongly egalitarian philosophy and processes
- Provision of full information to participants about the intent and processes of the research
- Informed, voluntary consent
- Provision for participants to withdraw their consent at any time without the need to provide a reason and without penalty
- Measures to respect confidentiality, and
- No financial inducements to participate.

This information was conveyed to potential participants via information sessions and in the written participant information sheet and consent form. As the Nurse Manager–Research, I have no line management function for any of the staff, and it was explained that the research, whilst of importance and of relevance to my work role, was separate to and additional to that role. I did not know many of the ward's staff prior to this study; and I believe that I was not known, in turn, by many of the staff on the ward. I placed posters, with information about the study and a photograph of myself, in several prominent positions around the ward for all to see. The potential for the distortion of power as a result of my work role was a tension to me throughout the study. However, it was largely owing to the critical intent of the study that I was attentive to issues of power, and incorporated my reflections about power in the design and ongoing conduct of the study.

The difficulties arising from the insider/outsider relationship in research have been discussed in the literature (see, for example, Bonner & Tolhurst, 2002; Borbasi, Jackson, & Wilkes, 2005; Murphy, 2005). My insider position as a member of the institution's nursing services afforded me certain privileges. For example, I had knowledge of the processes to follow to gain access to the research site of my choice. The two very senior nurses with whom I discussed the study knew me from other committees and work situations. The District Director of Nursing, the most senior nurse in the health service district, was also my line manager and having her active support for my studies undoubtedly smoothed the research path. My general nursing experiences shaped some expectations as to what I would see in a paediatric ward. However, my lack of specialty paediatric nursing (other than in ophthalmic nursing) and my prior lack of involvement with the Children's Ward, together with my status as a doctoral research student, meant that I frequently felt very much an outsider.

When I visited the ward, I could use my employee access card to unlock the entry door; I did not need to use the intercom to announce my arrival and request entry as did visitors and many other hospital staff. However, I did not take with me tell-tale signs of my work role such as mobile phone and diary, when in the ward as the researcher; and my hospital identification badge was not worn in a prominent position. This was an attempt to indicate to the staff that I was there as a researcher rather than as a nurse manager. At the same time, however, my privileged position within the nursing services meant that I knew the types of documents that may be readily available for me to peruse and where to find them; and it possibly meant that

some nurses did not openly question my presence on the ward as much as I had anticipated.

The need to have an identified procedure to follow should I observe anything untoward, such as unprofessional, unethical or illegal behaviours, was discussed in the planning phases of this study. I included information about that procedure in my ethics submissions. If, during the course of the research (including the observation and interview stages), instances of unsafe behaviour or behaviour in breach of professional codes of practice became apparent to me, the established hospital policies would be followed. This would, in the first instance, include drawing the participants' attention to the matter; and taking necessary steps to render the situation safe. If the participants should elect not to follow through the situation with their line manager then, as the researcher, I would inform them of my professional obligations to discuss the matter further, immediately, with their immediate supervisor. At no stage in the study did I have cause to resort to such action.

4.4.2 Confidentiality

Consistent with the undertakings given in the ethics proposal, attention was paid to the storage of consent forms, fieldnotes, reflective journals, audio-tapes and their transcripts, video recordings and computer files. Participants were informed that absolute confidentiality could not be assured in the context of discussion groups or group interactions. As much as possible, the anonymity of participants was protected during the study and the writing of this report, but individual nurses may be able to identify some elements of their discussions with the researcher within the thesis. The

hospital may also be identifiable, because of some unique features that would be known to some readers.

4.5 The stage of monological data generation through observation

The main fieldwork phase of this study took place from the beginning of August 2004 until mid-February 2005; during that time I spent 115 hours spread over 78 visits to the Children's Ward, specifically for the purpose of data collection through observation. Visits took place on Sundays to Fridays, with the majority of the visits occurring on weekdays, sometimes visiting the ward twice on the same day. Visits to the ward took place during the mornings and afternoons, and a few visits took place in the late evening. The overlap of morning and afternoon shifts afforded me a particularly rich opportunity to observe the routine activities, with the greatest number of nurses on the ward at this time of day. The handovers between the nurses ending their shifts and those commencing their shifts were very productive. On these occasions there were greater numbers of nurses present and I could be particularly alert to whether or not they mentioned nursing research or explained any evidence upon which their plans of care were based. It was also a good time for me to learn about the breadth of knowledge required by the nurses to care for the children. I generally adhered to Carspecken's suggestion about the maximum length of individual observation periods, with only five visits being longer than two hours in duration. I maintained a record of my observation sessions, initially to guide me to vary the days and times of the visits. The following graphs summarise the observation periods, first by day of the week, and secondly by the month (refer to Graph 3.1 and Graph 3.2).

Figure 4.1 Graph - duration of observation visits to the Children's Ward by day of week

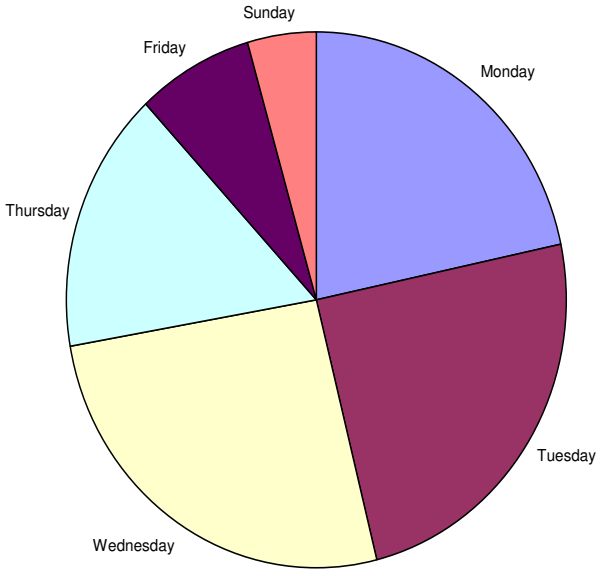
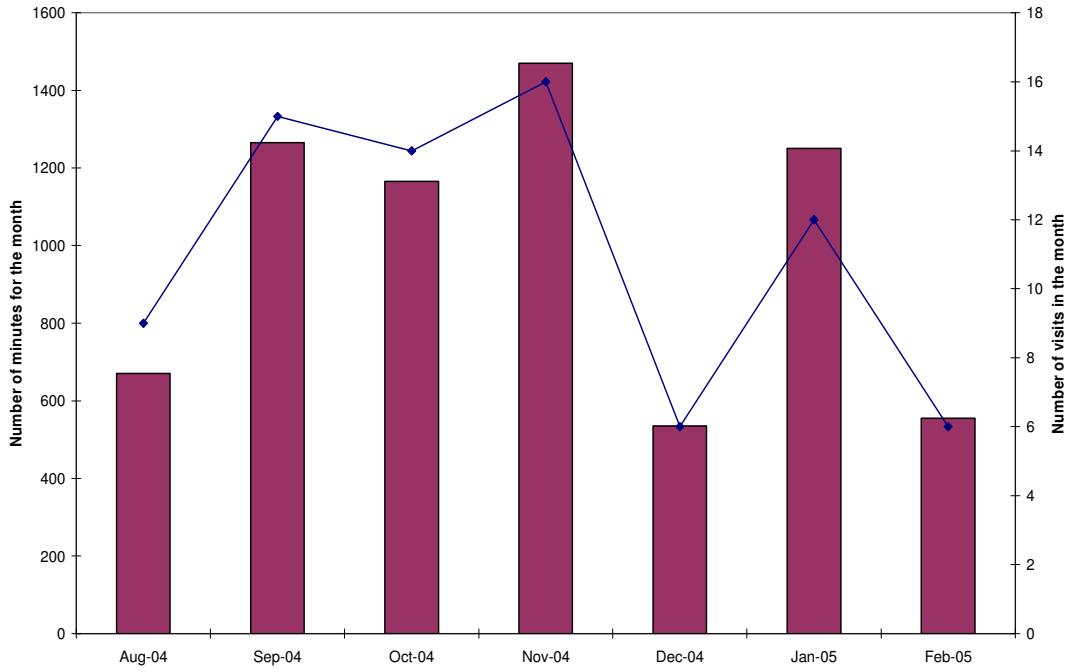


Figure 4.2 Graph - monthly summary of the observation visits to the Children's Ward, August 2004 to February 2005



Additional observation periods took place intermittently after this period, as I progressed to the other stages of the study, and gradually withdrew from the site. I cannot claim to have withdrawn from the ward completely, even at the time of writing this thesis, due to my ongoing work role. I continued to visit sporadically with the express purpose of ascertaining if there were any conflicting data; or data that would clarify how I might interpret the previously-collected data. There can be no hard and fast rules about how long observation should be continued within an ethnography (Wolcott, 1995), and some nurses still ask me when I will be 'back down in the ward'. However, a comprehensive sampling approach to periods of

observation and a systematic approach to fieldwork assisted in determining when sufficient periods of observation had been undertaken (Delamont, 2004, pp223-224). My decision to observe at less regular times was largely because of: practical limitations about how much time I could devote purely to fieldwork, the need to move to the next stage, changing focus and relationships after the interviews commenced, and competing work interests. Whilst no two shifts on a busy ward can ever be the same, I felt that I did have a grasp of the routine behaviours of the nurses on the Children's Ward, the routine and somewhat mundane events, as discussed by Thomas (1993), and that I was "recording the same basic routines over and over again" (Carspecken, 1996, p49). However, researchers who employ Carspecken's methodology can move back and forth between stages, as the need arises; hence, I could return to the Children's Ward if the need for additional focused observation periods arose.

Whilst the precise focus of observations was most likely influenced by my background, personal history, and the topic of interest, there are some general aspects about participant observation and fieldwork that warrant further discussion in the context of this study. Firstly, there is debate in the literature as to whether or not ethnographers should commence observations without *a priori* theories, or whether they should adopt a very directed approach towards observations from the beginning of a study (Hegelund, 2005). Agar's suggestion, which sits between these two extremes, is to use a funnel approach, whereby a "researcher starts out broadly and becomes increasingly focused as the research progresses" (Hegelund, 2005, p652). This narrowing funnel approach can be used to collect formal and informal

information in an ethnography, during observations and interviews (Agar, 1980), and it sits well with Carspecken's approach to critical qualitative research. In an effort to both focus my observations and build upon previous observations, I adopted this narrowing funnel approach and became progressively more purposeful in selecting times to visit the ward, for example, and in choosing who to observe whilst there. I referred to the nurses' rosters when planning subsequent observation visits, to maximise the opportunities to observe when particular nurses and combinations of nurses were on duty.

The means by which observation data are captured also warrants some discussion. Carspecken (1996) suggests that it is best to use multiple recording devices during this stage. Some researchers have been able to follow Carspecken's recommendation to use recording devices during observations (see, for example, Korth, 2001; Mills, 2005; Van Horn, 2001) and other researchers have adapted Carspecken's approach without the use of recording devices in this phase (see, for example, Hardcastle, Usher, & Holmes, 2006). Carspecken, an educational researcher, has provided examples of the use of his methodology within a classroom setting, where activities may be more predictable within a smaller and more defined space than is found in a typical hospital ward. Due to the nature of everyday life within a busy hospital ward, I deemed it inappropriate to use an audio-recorder whilst observing. I felt that it would be too intrusive to use a recording device, and felt that the use of such devices would not foster congenial relationships between me and the nurses in whose actions I was interested.

Rather than creating a primary record and another separate field journal as suggested by Carspecken, I wrote my thick descriptions, less thick descriptions and comments about what I was observing, in the one book that I could take with me anywhere, anytime. In this journal, whenever possible, I endeavoured to record speech acts verbatim and make notes of meta-communications such as body posture and gestures, although it did prove difficult to record these simultaneously. At times I also noted my subjective feelings of how I felt, because "meaning has an embodied quality" (Carspecken, 1996, p125). I also described the context at the start of each observation period, recorded the time frequently, used brackets to distinguish my comments as the observer from other notations, and occasionally I used diagrams to augment the textual description. In these ways I was able to follow Carspecken's recommendations pertaining to thick descriptions, as described in Chapter Three.

As Groenkjaer (2002) concludes, it is preferable to record field notes as soon as possible after events occur so that important information is not forgotten. Generally, I endeavoured to write notes in my field journal whilst on the ward, although this was not always possible. For example, I sometimes found it too intrusive, and considered it ill-mannered, to write whilst people were talking with me. While the nurses accepted that I was often writing, it was not always clear to them exactly what I might be noting. Sometimes nurses asked me about my notes, and I shared with them a broad outline of what I was interested in. I found, as did Groenkjaer (2002), that writing field notes was relatively easy when in the ward office, because that was one of the routine uses of this room. That is, common staff activities in this room included: writing in the medical records, referring to the communication book,

looking up rosters, sending faxes, printing documents and so on. However, I felt uneasy writing elsewhere in the ward, and in those situations I relied on my memory when I eventually wrote my notes after leaving the area. It was not always possible to do this immediately after leaving the ward because I was required to return to my work role as a Nurse Manager, and other matters took precedence. To proactively manage this problem, as stage one progressed, I began to write the possible observation times as appointments in my diary, and endeavoured to include time for recording of observations at the end of the period before resuming pressing work tasks.

I also found it extremely difficult to plan what was important to observe and record. After all, it was probable that whilst writing field notes, events that might later prove to be relevant to the study occurred in other parts of the ward and hence were missed, a problem acknowledged by Flick (2006, p228). This left me with lingering doubts during the course of the observation phase, one which other researchers who employ participant observation no doubt face. But I can draw some solace from the advice given by Wolcott (1995), that fieldwork is an art and there is no one single way to approach it. Rather, it is important to be aware of what you are attending to, why you are attending to it, and give it your full attention (Wolcott, 1995, p96). I have addressed another concern faced by fieldworkers, that is, how much time 'in the field' is adequate, earlier in this section.

As the observation phase progressed, and my familiarity with what had initially been a strange environment grew, I engaged in more dialogue with the staff. I used these

opportunities to seek clarification and comments about my preliminary reconstructions from my observations about the ward's culture. I found that my presence in the ward was accepted, with staff most often approaching me and readily starting a conversation. My participation in actual clinical nursing care, while on the ward as the researcher, was generally limited to holding and settling a baby, thereby freeing the ward nurse to attend to the needs of other children. Those few occasions when I nursed a child to sleep were noticed, appreciated and commented upon by the nurses, and I felt they helped to break down barriers between my researcher role and the role of the nurse clinicians. Such instances certainly assisted in the nurses accepting my presence, and affirming my credibility as a 'real nurse'. I was told by one Registered Nurse that I should attend the ward's Christmas party because "You've been here long enough. You're part of us." (*field notes, 15-12-2004*)

4.5.1 Obtaining background information about the staff through questionnaire

At the commencement of the study, I devised a questionnaire which would enable me to obtain some background information relating to the staff on the Children's Ward, and their prior involvement with research that would supplement my fieldwork. Two nursing colleagues completed the draft questionnaire and minor amendments were made after discussing their feedback with them. The final questionnaire is included as Appendix B. The purposes of the questionnaire were to:

- Gather background information related to the demographics of the staff (nurses, allied health professionals and doctors)

- Ascertain a broad overview of their actual involvement with various aspects of research, for example, writing of submissions to ethics committees, collecting data and publishing research results
- Obtain information about the respondents' formal education relating to research, and their knowledge and experience with retrieving research literature. These questions were prompted by my reading of the literature about barriers and facilitators of clinical nursing research.

Fifty questionnaires were taken to the Children's Ward three months after the commencement of fieldwork. By that time, the staff were accustomed to my presence, and a newly-appointed Nurse Unit Manager had just commenced employment. Staff were informed about the questionnaires through the ward's usual means of communication, that is, via ward meetings, a note in the communication book, a sign in the ward office and by personal communication. A box for completed questionnaires was provided. I was pleasantly surprised that there were responses from doctors and allied health personnel, since the questionnaire was not actively promoted to them. I believe that a couple of nurses took it upon themselves to encourage their colleagues to complete them. There were 22 completed questionnaires from the Children's Ward: 15 from nurses (approximately 50 per cent of the nurses on the roster), three from doctors and four from allied health personnel. The results are presented in Chapter Five.

Staff from the Neonatal Unit (another 'locale' to use Carspecken's terminology), were also asked to consider completing the questionnaire. Using their routine

communication processes, the Neonatal Unit's Clinical Nurse Consultant placed questionnaires in the tearoom, and drew the staff's attention to them, and I provided a box for completed questionnaires. I had several reasons for selecting Neonatal Unit as the second area. In my work role I had found the senior nurses in that unit very supportive of the Clinical Nurses with respect to their research endeavours; and knew that several of the neonatal nurses had presented research posters at state and national conferences. There was a Clinical Nurse employed as a Research Nurse on the unit, assisting with some research projects initiated primarily by the neonatologists. There was already in existence a weekly Journal Club where research publications were presented and discussed, and to which the nurses were invited and contributed. The Neonatal Unit and Children's Ward are both part of the Women's and Children's Institute of the Health Service District, and I thought that it may prove useful to have this additional information, collected at a similar time, for the later stages in the critical ethnography when looking for evidence of system relationships across related sites.

4.5 The stage of dialogical data generation through interviews

Nine nurses participated in interviews that were audio-taped, and the tapes were later transcribed verbatim. Interviews took place in private, in a closed office at a time nominated by the interviewees. All but one interview took place from May 2005 onwards; the exception was an interview undertaken early in the study in September 2004. Many more nurses consented to participate than were eventually selected for interview. The nurses were selected partly due to criteria determined prior to the commencement of the study, and partly as an outcome of the preliminary

reconstructions undertaken on the data collected during the periods of observation. The nature of interactions between the nurses and me during the observation phase, as well as chance events that I had observed, also influenced my selection.

Consistent with the acknowledgement by critical theorists of the link between power, language and voice (Davey & Liefooghe, 2004, p181), I purposefully interviewed nurses with different levels of formal and informal power, who had different levels of 'voice' on the ward, and I included some nurses who were openly resistant to nursing research and other nurses who represented a quieter group. Consequently, I interviewed ward nurses from all levels: an Enrolled Nurse, Registered Nurses, Clinical Nurses, the Clinical Nurse Consultant who was on the ward at the commencement of the study, and the Nurse Unit Manager who was appointed to the ward during the course of the first stage.

There were some significant staff movements during the observation stage of the study. The part-time Clinical Nurse Consultant relocated; I interviewed that nurse quite early in the observation phase. One of the Clinical Nurses who I interviewed had been the Acting Clinical Nurse Consultant during the latter part of the study's observation phase. I was unable to interview the Clinical Nurse who had been the Acting Nurse Unit Manager at the time of the study's commencement because she had transferred to another unit. However, the newly-appointed Nurse Unit Manager was interviewed, and continued to facilitate my continuance of the study in the ward. Plans to interview one particular Registered Nurse were modified on several occasions as a result of roster changes, sickness and fatigue, and general difficulties

finding a mutually-available time. Despite these modifications, this nurse was unable to be interviewed prior to her transfer to another hospital area.

In addition to the variations in their formal roles as described above, the informants were selected because of their apparent differences in attitudes towards nursing research, as identified during the periods of observation. These differences were along a continuum from: no interest or wish to be actively involved in research in clinical practice, to very interested and involved in research in practice. Consequently, I anticipated that some interviews would be more difficult than others. The informants also represented the different networks of nurses on the ward. Their years of experience within nursing varied considerably, as did their clinical experience and formal education pertaining to paediatric nursing. Several of the registered nurses I interviewed had previous experience of acting at a higher level.

Carspecken's recommendations about the structure of the interview questions and process were followed. Initial meaning reconstructions of the data obtained from the observation phase provided the background information to guide the interviews, specifically with the identification of topic domains, lead-off questions, and the sub-themes and covert categories I was interested in exploring further with the participants. This preparatory work allowed me to direct the course of the interviews, in order to build upon the information previously gathered during the fieldwork phase. The particular questions and focus of the interviews varied slightly amongst participants. Whilst is it difficult to take these out of context, examples of how I structured the questions are included below (refer to Table 4.1).

Table 4.1 Interview schedule

Domain	Lead-off questions	Sub-themes, covert categories
○ Initiating research	○ If you had the opportunity, what research would you suggest be undertaken in paediatrics? Why? ○ What would be needed to enable you to do nursing research on the ward?	○ How realistic is ward-based research ○ Control of own destiny ○ Choose the routine, everyday or special ○ Pain, dressings, drugs ○ Resources
○ Different responsibil-ities with regard to nursing research at different levels	○ What do you perceive in reality/practice, to be the difference between the NO2 and NO3 levels with regard to research? ○ Can you recall an occasion when you (NO2) looked up current research of relevance to the ward? ○ Can you recall ever introducing into a conversation, your research or other research you have read? ○ Who should decide topics for ward research projects? ○ Where should the impetus for nursing research come from?	○ Position descriptions not used ○ Individuals ○ Difficulty engaging nurses ○ Conflict between expectations ○ Resources ○ Computer literacy skills ○ Nursing research imposed ○ Okay to work with position descriptions ○ What counts as nursing research
○ Standards of care	○ Can you recall a time when you disagreed with another staff member about how to manage a patient, for example, how to do a dressing, use a product? ○ How do you go about discussing disagreements about the use of dressings with your colleagues?	○ Do not argue ○ Hierarchy ○ Only some have a voice ○ Standards ○ Role of current research ○ Knowledge handed down ○ Alerting staff about new evidence ○ Advising necessary changes to policies and procedures

Domain	Lead-off questions	Sub-themes, covert categories
○ Using evidence in practice	○ Can you tell me about an occasion in the Children's Ward when evidence from research has been used in practice? ○ How is information, knowledge shared? ○ Who is likely to use evidence? ○ What practices are current, updated? ○ Is there some area of nursing care where Children's Ward excels? ○ On a daily basis to what extent do you see nurses using research evidence to inform their practice?	○ What counts as research ○ Nursing research versus other research ○ Routine, old-fashioned, own way ○ Serendipity versus planning ○ Strategies for disseminating research ○ Trying to increase use of research ○ Question the doctors, or do not question the doctors ○ Access to computers ○ Sharing of information ○ Nursing research booklet
○ Opportunities for self development	○ Early this year, you told me that you liked the opportunities here; and that you look up information rather than deferring to others. Is this still so?	○ Finding research ○ Holders of information ○ People set in their ways
○ Different expectations in different systems	○ What is different, specifically with regard to research, between here and the international (or other) hospitals you have worked in?	○ Different expectations ○ Different amount, type of nursing research
○ Nursing research requires resources	○ Before you started here, the Clinical Nurses told me that their off-line time had usually been cancelled. There were two consequences of this – did their research in their own time or did not do it. What are your expectations as a Nurse Unit Manager about what resources are reasonable?	○ Plan to allocate time for research, but clinical needs are more important ○ Contracts ○ Research is an add-on, or it is part of work

Domain	Lead-off questions	Sub-themes, covert categories
○ Research and change	○ Have any of the Clinical Nurses' projects led to change? ○ Which? ○ How do you know?	○ Relevance of small-scale projects ○ Selection of topics ○ Lack of staff awareness ○ Who drives change
○ A nursing research culture	○ What strategies need to be used to develop a nursing research culture?	○ How to tell if there is a nursing research culture ○ Resources, responsibilities

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During interviews, I sought clarification whenever what the nurse told me conflicted with my reconstructions of the observations on the ward. All interviewees were aware from the participant information sheets and consent forms that the purpose of the interviews was for me to gain a more in-depth understanding of the nursing research culture within the Children's Ward. Thus, they had some idea of the direction of the interview, and on occasion they almost pre-empted some of my questions. However, interviewers do rely upon the honesty of the interviewees and their willingness to divulge information, and to this end, I tried to follow Carspecken's suggestions about appropriate interviewer responses, to encourage frank discussion and seek some entrée into their subjective world. Whilst I did not formally re-interview any of the nurses, I did see all the nurses on subsequent visits to the ward and around the hospital. On those occasions, there were opportunities for us to discuss the interviews informally, seek more information, and comment upon any outcomes from the interviews.

4.7 An extension of the study – the 'Working Party' and the addition of video

I attempted another period of intense fieldwork approximately twelve months after the commencement of the initial phase of participant observation, largely to explore if there had been change over time, and to use it as an opportunity to obtain information that might lead to different conclusions from the information obtained in the initial phase of observations (Stewart, 1998). However, I was no longer able to look upon ward activities as a stranger. I had become comfortable during my previous visits to the Children's Ward and interactions with the staff, and no new routines were apparent to me from these additional periods of observation. Through informal discussions with some of the nurses, I had acquired some knowledge of changes affecting the ward, and the additional periods of observation were not providing new information. Also, my presence on the ward was not questioned, even by the considerable number of nursing staff newly-appointed to the Children's Ward since my routine visiting had become far less frequent and regular. Perhaps these recently-appointed nurses did not feel part of the study and hence felt that they did not need to participate; only a couple responded to the participant information sheets and consent forms that I had distributed for their perusal. I circulated the questionnaire as in the initial fieldwork phase and asked the nurses to complete the form even if they had done so the previous year. Disappointingly, only six completed questionnaires were returned. It was as though 'the time had passed'.

Around the same time, August 2005, I heard about a working party that the Nurse Unit Manager had been attempting to establish on the ward. Its purpose was to

review the model of nursing care practiced on the ward and devise one that would better suit the needs of the nurses, patients and nursing services. From the time of the establishment of the new hospital, all wards had been expected to work under a model of care called the 'Partnership Model'. Since her appointment in October 2004, the Nurse Unit Manager had noticed that there were problems with the way the nurses organised themselves on a shift-by-shift basis, and she observed that the purported model of nursing care was not being enacted. Nurses themselves had identified workload issues and problems with doubling of workload within the teams, and had brought these to the attention of the Nurse Unit Manager who, in turn, attributed the complaints she had received from some parents as due, in part, to the nurses were not working collaboratively as they should. Rather than drive change entirely from the 'top down', she called for expressions of interest from the nurses to join a working party to explore the 'model of care' concept and suggest changes to suit the local context of the Children's Ward, whilst working within the constraints of the Nursing Services' mandated model. At the first meeting the Nurse Unit Manager said:

> "We have to work within [the] partnership model, however this can work in a variety of ways. We will review different models and nursing practices to see what we want in ours and what works for the unit" (*as recorded in minutes, working party meeting number one, 11-10-2005*).

The nurses were prepared to challenge the 'taken for granted', and shape the future; in fact, they were adopting a critical stance (Thomas, 1993). Perhaps the goal of the working party had been, in part, prompted by the nurses' involvement in the critical ethnography.

It took two attempts to form the working party; consequently the first meeting did not take place until October 2005. The working party comprised: the Nurse Unit Manager, the Clinical Nurse Consultant and three other nurses who responded to the call for expressions of interest – a Clinical Nurse, a Registered Nurse and an Enrolled Nurse. Because of an accident that resulted in long-term sick leave, and a transfer away from the region, the originally-selected Enrolled Nurse and Registered Nurse were unavailable to join the working party. I had interviewed both of those nurses in that earlier phase of the critical ethnography. The Nurse Unit Manager still believed that it was important to try to have all levels of nurses represented and actively involved in the project, and so another complete group of five nurses was assembled. As it happened, the second Registered Nurse was also unable to participate after the first meeting, and subsequent meetings were organised by the Nurse Unit Manager around rosters for the remaining four nurses. I had previously interviewed two of those nurses, the Nurse Unit Manager and the Clinical Nurse, as part of the interview phase of the critical ethnography.

I was invited by the Nurse Unit Manager to participate in this working party, to the degree that I wanted. Whilst the working party could be viewed as just one aspect of the ward's normal business, I was pleased by the invitation to be involved, even if I decided to stay on the periphery. I felt that it was an indication that I had become a small part of the ward, and that I had some skills that were acknowledged and respected by the nurses. I was asked to help, and in turn requested if I could perhaps audio-tape or video-record the meetings and use the meetings as a source of additional data for the critical ethnography. Video recordings have several uses in

qualitative research (Schensul, LeCompte, Nastasi, & Borgatti, 1999), and are consistent with the selected methodology. Although members of the Working Party might find the video recordings useful in the future to evaluate their progress and performance, my primary purpose for adding video recordings in the context of this critical ethnography was to enhance the data obtained previously through observation, interviews and documentation. I did not use it for promoting interpersonal process recall, in the way that Carspecken (1996) suggests. Despite the suggestions of some researchers (Paterson, Bottorff, & Hewat, 2003), I did not presume that the audiovisual recordings were more credible than the other types of data. My hope was that they would capture the complexities and sequences of social interactions (Schensul et al., 1999).

Both the university's and health service's ethics committees approved this amendment to the research plan. Written consent was given by all participants, together with specific written consent to the use of video for research purposes as per the hospital's existing policy requiring such an agreement. The rapport and trust established with the ward's nurses may have contributed to their invitation to me to join with them in this new activity, and permit the video recording of the meetings (Paterson et al., 2003). I was particularly interested in discovering if the nurses would refer to research literature or utilise research findings during their deliberations as members of the working party. The meetings enabled me to continue observations in a different way. I acquired nonverbal data to the degree of detail permitted by the video recording; this was an enduring record that was superior to any notations I had made about nonverbal data during the initial fieldwork phase.

I was also interested in observing the dynamics of the interactions between the nurses who deliver direct patient care on the rotating shifts and the senior nurses who work fixed weekday shifts, in the context of an ongoing project. The recorded data would be analysed to ascertain if there were any linkages between what I had noted during periods of observation in the ward; and if there was congruence between the audiovisual data and data obtained in the interview phase.

The working party's meetings took place in the parents' room on the ward, the only room available that could accommodate the people and equipment. Prior to each meeting, I placed a sign on the door to indicate that it was unavailable for the parents to use, and I re-arranged the furniture and positioned the camera in approximately the same place, so that all persons would fit within the frame. To address the problem of deciding what to record, analogous to the dilemma of knowing what to observe, I decided in advance to record a 'wide view' of the meetings and achieved this by using a tripod and fixed camera. Specific decisions about lighting, distance, focus and modifying the visual image are matters of choice (Kellehear, 1993, p79). During the meetings I sometimes used the camera's zoom capacities, to achieve a more focussed view. For most of the time, however, the camera was left unadjusted. In this way it was relatively unobtrusive. The use of the video recorder enabled me to more readily participate in the deliberations of the group, knowing that I had the visual and audio records for later analysis. Alternatively, I could sit in the background and write supplementary field notes and reflections, with the knowledge that I would be able to return to the permanent audiovisual record. In this way, I used the video recordings to supplement my participant observation (Paterson et al.,

2003). I assisted the working party by taking on the responsibility of writing and distributing the minutes of the meetings that I attended.

Three of the four members of the working party were very accustomed to my presence on the Children's Ward during the initial phase of the critical ethnography, the fourth member having only joined the ward after the end of that initial phase. All of the nurses, at one time or another, commented about the presence of the video camera, displayed self-conscious behaviours during the filming, or directed their gaze to the camera and away from their colleagues. However, as with observation, the participants became noticeably less conscious of the camera over time. In fact, they too acknowledged the usefulness of the recordings. Following one meeting, one of the participants said to me:

> "I suddenly realised half way through that you'll see me suddenly smirk and start laughing, because I've had this…. I am usually very aware of body language, because I use a lot of it myself. Now it's caught on tape, it made me laugh…. But I was quite cross, very cross" (*audiotape, following meeting of 10-06-2006*).

This participant then proceeded to explain her reasons for her body posture and nonverbal communications, and to provide me with additional background information about what had been happening on the Children's Ward which had led to her responses and reactions.

The attempt to audio-tape and video-record each meeting on mini-DVD was beset by technical and practical glitches, which included: only half of the first meeting being audio-taped, with no videorecording; the settings on a substitute video-recorder for the second meeting had been changed, so once again only half of that meeting was

recorded; the micro cassette audio-tape broke on one occasion; and the list goes on. A back up copy of each mini-DVD was made immediately following each meeting. Despite the best of intentions, meetings were less frequent than planned, meaning that progress with the working party's goals was slow. It proved difficult to convene meetings on the planned dates, and late roster changes, periods of annual leave, and even a cyclone, meant that nurses were often unable to attend and the meeting would need to be rescheduled. Eventually the working party was disbanded prior to achieving all of its goals. Nonetheless, I have either audiocassette or DVD recordings of four meetings, held between November 2005 and June 2006, and these have been analysed and interpreted to supplement the observational and interview data.

4.8 Collection of material data

Material data, such as photographs and documents, have been described as "mute evidence" (Hodder, 2003, p155), but can provide information that reveals the nuances of cultural meaning and process (Thomas, 1993, p38). Although the provision for taking still photographs had been built into the approved research design, I chose to take only a couple and relied instead on my written notes for the description of the research site. However, documents associated specifically with the Children's Ward were collected throughout the course of the study, for interpretation in the later stages. I also collected documents that pertained to other hospital areas related to the Children's Ward, to the nursing services, to the health district and the public health system. These documents included: memos; policies and procedures;

journal articles; minutes of meetings; e-mails distributed to the nurses and staff of the health district; and government reports.

Many of the more general documents were available to me in the course of my employment as a nurse within the health service district, and hence were relatively easy to acquire. Other documents were specifically sought. For example, I requested information not routinely available to me in my professional role: admission diagnoses; bed occupancy, patient throughput and casemix; ward documents such as strategic plans and staff orientation manuals. There were also some documents that I create and maintain as the Nurse Manager–Research, which contained information for consideration in the interpretive phases. These documents include: nurses' attendance at nursing research education sessions, completion or non-completion of nursing research projects, and applications for nursing research grants. Besides being relatively easy to acquire, documents are enduring over time (Hodder, 2003), and hence I could analyse and interpret them together with the monological and dialogical data collected during the observational and interview phases of the critical ethnography.

The collection of documents is consistent with Carspecken's methodology. The choice of documents is the responsibility of the researcher, and is related to the research questions. In the preliminary planning steps of the project, I anticipated some of the documents that might need to be acquired; during the course of the study I acquired others, sometimes opportunistically, and sometimes purposively. I was attuned to some of the e-mails that were distributed to all staff during the study,

because of the information they provided about significant changes occurring to the broader health system. I suspect that the majority of the ward nurses did not view these documents from the critical perspective that I did. With no explicit direction given within the methodology as to how to analyse or interpret documents, I anticipated that the major use of the material data would be to provide information about the social, historical and political pressures on the nurses, which was then to be interpreted from a critical theory standpoint.

4.9 Chapter summary

This chapter has described the conduct of the study and identified any departures from the selected methodology. Some notable points are:

- The study spanned a considerable time period
- I continued working in my role as Nurse Manager–Research throughout the study
- Intensive fieldwork in the Children's Ward took place between mid-August 2004 and mid-February 2005
- Eight of the nine interviews took place three to four months after the completion of this intense period of observation
- All levels of nursing staff on the Children's Ward were formally interviewed
- Video-recording of the meetings of a working party commenced some six months after the interviews were completed
- During the 'in between' periods, there were irregular visits to the ward; and less formal discussions took place with some of the nurses in areas away from the Children's Ward

- Nurses, doctors and allied health staff on the ward were very receptive to the study, and welcomed the researcher on all her visits to the ward
- An ongoing, respectful working relationship developed between the researcher and key staff on the Children's Ward, which has carried through to interactions and ventures outside the focus of this study.

With respect to the critical ethnography, the researcher organised, analysed and interpreted the data. The following chapter, Chapter Five, presents a detailed description of the environment of the Children's Ward, as was built up over the course of the study. Analyses of the findings from a critical theory perspective follow in subsequent chapters.

Chapter 5: Findings – the environment of the ward

5.1 Chapter introduction

This chapter presents initial findings from the ethnography, specifically with respect to the environment of the Children's Ward and the staff allocated to the ward. It is usual to expect detailed description within an ethnography, and I have maintained this convention. It is anticipated that the reader will gain a clear picture of the Children's Ward and an appreciation of the context in which this study was undertaken. I have retained the use of Carspecken's terminology in that the Children's Ward was the *Site* where the observational phase of the study took place. The term 'setting' might more usually be used in other research, but setting has a different meaning for Carspecken (1996), as I described in Chapter Three. The detailed description includes information about the:

- Physical features of the Children's Ward
- Relationships between the Children's Ward, Nursing Services and the Health Service, and
- Staffing and routine activities of the Children's Ward.

This description is informed by historical, social and political influences that were revealed throughout the ethnography, primarily from the data collected during the fieldwork observations, interviews and meetings of the working party. The involvement of staff and their prior experience with research is also discussed. Some information acquired from the formal interviews and working party meetings is interwoven in this description of the environment of the ward. I anticipate that the

presentation of these findings will set the scene for subsequent chapters, in which the data is analysed from a critical theory perspective.

5.2 The Children's Ward

The primary site for this study was the Children's Ward of a regional public hospital in Queensland, Australia. The hospital is a teaching hospital for nursing and medical students and, more recently, students in the allied health professions, including physiotherapy, occupational therapy and speech pathology. These students are drawn from several tertiary institutions, although the greatest numbers come from the university that is located adjacent to the hospital. There is a turnover of recently-graduated medical staff as they gain experience in different clinical rotations within the health service. Additionally, whilst a core of the city's population has been resident for several generations, there is a large transient population due to the nature of the city's employment base. The hospital complex itself is 'new', having only opened in October 2001, not quite three years before the fieldwork was commenced. This newness was obvious in the hospital's building design; there is a lot of light and open space in public thoroughfares and inpatient wards.

The health service, of which the hospital was but one part, was organised according to institutes; the Children's Ward was part of the Women's and Children's Institute. The Children's Ward obviously had a specialty focus, but it functioned as just one ward within a general hospital; children who required intensive care were admitted to the adult Intensive Care Unit until they were well enough to be transferred to the Children's Ward. There was an underlying tension between staff and administration

at times, as to whether or not the Children's Ward was indeed a specialty area. Some nurses expressed that they felt that the ward was the forgotten part of the Women's and Children's Institute, and that greater attention was paid to the adult female patients. By way of contrast, the Children's Ward was indeed the tertiary referral centre for children requiring neurosurgery, chemotherapy, management of burns, and care for mental health problems. If the ward did not exist, children would need to be transported more than 1000 kilometres to a specialty children's hospital in the state's capital city for such services. This information was provided to nurses as part of their ward orientation.

The Paediatric Service is fortunate in that it receives substantial financial and in-kind support from external organisations, which helps offset the budgetary constraints imposed by the health service district. Comfortable chairs, that convert to beds for the use of parents when staying overnight with their children, were purchased from money donated to the Children's Ward during the course of this study. This was but one example of changes to the facilities and resources that occurred over the time span of the study; for purposes of clarity, I have only discussed some of these in my description of the ward. The Children's Ward has developed links with community groups; members of national sporting teams have 'adopted' the ward. I saw some of these special visitors on the ward during the fieldwork phase: for example, members of the football and basketball sporting teams, clowns and other entertainers. These events provided the opportunity for favourable media publicity, which contrasted with numerous negatively-focused stories about the hospital and the health service district that appeared in the local media during the course of the study. In fact, the

District Manager had, through staff forums and e-mails, openly expressed his frustration on numerous occasions about this apparently negative bias of the local media. In early 2005, one of the paediatric nurses gave testimony in an investigation into the ongoing registration of a medical officer held at the local court; this case attracted media publicity. At an even wider level, there were serious high-level reviews and inquiries into aspects of the State's Health Service, particularly during the latter time period of this study. These included the *Queensland Health Systems Review*, known as the *Forster Review* (Queensland Health, 2005a) conducted over three months in 2005, which examined the administration, clinical and performance management systems, and which would result in yet another substantial upheaval and reorganisation of the state's health system.

Over the course of the study, there were several changes to the inclusions of the Women's and Children's Institute, and to the organisation and management of the various components of the Institute. Broadly, the Women's and Children's Institute included the Children's Ward, the Maternity Unit, the Birth Suite, and the Women's and Children's Clinics. At the commencement of the study, the senior nursing staff of the Children's Ward reported to the Operations (Nursing) Director of the Institute. Soon after the completion of the interview phase of the study, nursing services within the Children's Ward became the responsibility of a newly-created position of Nursing Director – Child Protection. At the same time, Child Health moved from the Institute of Community Services and also became the responsibility of this Nursing Director. There seemed to be constant changes to other institutes within the health

service during the study, making it very difficult for most nurses, including myself in my work role, to keep track of which units and services reported to which Directors.

There were nursing vacancies on the Children's Ward's roster, as there were across the hospital wards and services, reflecting a general shortage of nursing staff that would become more acute at certain times. Changes at all levels of nursing staff on the Children's Ward occurred throughout the course of the study. Two nurses, both new to the ward, were appointed to the two most senior ward nursing positions, those of Nurse Unit Manager and Clinical Nurse Consultant. The Nurse Unit Manager was recruited from the United Kingdom, and the Clinical Nurse Consultant had worked as a Clinical Nurse in another unit within another institute of the health service. Other nurses 'acted up' in various roles during the study, and there was considerable turnover of nursing staff, largely related to maternity leave, relocation of partners, or transfer to other departments to gain different clinical experiences. By way of contrast, some of the staff had worked in the ward for a long time. On one of my visits, a nurse showed me an old photograph of a baby; the baby was currently the mother of one of the children being cared for on the ward. Another nurse told me that one of the registered nurses had looked after her as a three-month old baby in the old hospital more than twenty years previously. The wisdom gained through this clinical experience over the long term was usually valued by the staff, but there were also complaints that some nurses did not change their ways. Some of the nurses recruited to the Children's Ward had paediatrics experience, and sometimes paediatric qualifications, from Australia or overseas.

There were considerably fewer inpatient beds for children than there had been three decades earlier at the old hospital, when there had been a separate Children's Isolation Unit in addition to the Children's Ward, and a large area allocated to the school. This reduction in inpatient accommodation is likely to reflect changes to the management of childhood illnesses, and is in line with a general reduction in the length of stay for all hospital patients over recent decades. It did mean, however, that frequently there were competing demands for the available beds. Other paediatric services provided at the time of this study included Paediatric Outreach, Specialty Clinics, and Child Health; these services reflected the expansion of community-based healthcare. Nursing staff from the Children's Ward were expected to participate in numerous committees, many of which were multidisciplinary and some of which spanned inpatient and outpatient services.

The 23-bed Children's Ward is located on the ground floor of the hospital's three-storey ward block, across the corridor from the Women's Health Unit (the Maternity Unit). The children were accommodated in either single rooms or multi-bed bays. Cots and beds could be moved into and out of any of these rooms, according to the ages and needs of the individual children. There are only five single bedrooms, which were to be allocated according to medical need; however, the allocation of these scarce resources was sometimes problematic in practice. Children who were immuno-compromised and thus susceptible to acquiring infections, and children with infections that were likely to be caught by others, should have been given highest priority in the allocation of the single rooms. Some nurses preferred to keep at least one of these rooms spare, just in case it might be needed unexpectedly, but it was

recognised that this was difficult to justify in a general climate of extreme demands for beds. On rare occasions a child's elective admission would be cancelled due to lack of beds on the ward or, extremely rarely, the Children's Ward would accommodate an adult female patient because of a lack of beds in the adult wards. Nevertheless, it was noted that children were sometimes placed in single rooms unnecessarily. It was important that the single rooms were not allocated to children whose condition did not require isolation, which was seen as wasteful. So, as one interviewee pointed out, it was somewhat of a balancing act, being prepared for the potential need for an isolation room whilst not wasting resources (*Interview "E", 04-07-05, lines 464-469*).

All children could look from their beds through the windows to the garden or play areas, because the bedrooms are located along the two longer sides of the rectangular-shaped ward (refer to Appendix C for a diagram of the ward). One of the multi-bed bays, located close to the nurses' station, generally had six cots and was colloquially called the *babies' bay*. All of the bays and single rooms, except for the babies' bay, had their own ensuite facilities. Televisions, suspended from the ceilings, were in all of the bedrooms except for the babies' bay; televisions were added to the babies' bay after this study was completed. The majority of the furnishings in the patient care areas of the Children's Ward looked new, and they were added to during the course of the study. For example, some additional hanging mobiles were purchased. In contrast, some general furnishings such as office chairs were not new; they had been brought across from the 'old' hospital when the new building opened in October 2001. Some of these general-use office chairs were

wobbly, old and shabby; new office chairs were not necessarily high expenditure priorities of the ward.

There are two entrances to the Children's Ward. Staff with 'swipe card access' could use either entrance; parents, visitors, and some staff whose swipe card access did not extend to the Children's Ward, used the intercom system that was only installed at one of the entrances. When visitors entered the ward through that door, they passed the open playroom before they reached the nurses' station or any of the bedrooms. The colourful playroom contained child-size tables and chairs, books, toys, electronic games consoles *(Nintendos)*, and a television (refer to Figure 5.1). Sometimes the room looked untidy and was noisy, as would be expected when children are at play; at other times it was neat and quiet, with everything packed away and switched off. The safe, fenced, external playground area was only accessible via the playroom. It had climbing equipment, a cushioned ground surface, outdoor toys and seats. This area was only partly shaded by the buildings and gardens, and was rarely used in the middle of the day due to the heat. Notwithstanding this, it was a pleasant place to be; and it was observed to be well-used by children and their families.

The schoolroom opened off the playroom and was staffed by a part-time teacher and a teacher's aide. Children who were in hospital for longer than a few days could participate in the hospital school, which was a collaborative venture between the State's Health and Education Departments. If children were too ill to attend the classroom, the teacher would design bedside classes. Siblings of children who were patients in the Children's Ward, and children whose parents were hospitalised for

extended lengths of stay, were also welcome to attend the classes conducted in the hospital school, which was featured in the television and print media some time after the completion of the fieldwork phase of this study.

Figure 5.1 Photograph of playroom, looking toward external playground

A lounge room, breastfeeding room, and bathroom facilities were provided for the use of parents and carers; and parents were encouraged to stay overnight in the ward with their children. The parents' lounge opened off the playroom; parents could make and consume hot drinks and snacks in this room. A refrigerator, toaster, microwave and electric kettle; table, chairs and a sofa; magazines and other reading

material, were provided in this room. A limited number of information brochures pertaining to child health, health promotion, and community support services were available, but were often hidden beneath general magazines. Parents should have received a brochure about the Children's Ward at the time of their child's admission, but I noted that this did not always happen and I found old versions of this brochure in circulation around the ward during the fieldwork. The staff acknowledged that the parents' facilities could be improved, and towards the end of the study they were endeavouring to ascertain what improvements could be made, by asking parents to respond to questionnaires given to them when their children were admitted to the Ward. I was not aware of any general restrictions on the number of visitors that could be with any child at any particular time; what constituted an excessive number was decided on an individual basis. However, many of the children came from more remote areas, and various family members would take it in turn to stay with them. On-campus accommodation options for families were limited; social workers tried very hard to secure accommodation for those families who needed it.

Whilst the children's bedrooms were located along the outer edge of the corridors of the ward, service rooms were located down the centre of the ward and included: the bathroom used for burns baths; a treatment room where chemotherapy was administered on Fridays and other procedures undertaken on any day of the week; equipment storerooms; a clean utility room where medications were stored and in some cases prepared; a dirty utility room; the parents' bathroom and laundry facilities; *The Milky Way* where bottles of artificial milk formulas were prepared and equipment used for formulas and feeds was cleaned; staff locker room; the doctors'

office and the office of the Nurse Unit Manager. A kitchenette, another storeroom and the breastfeeding room were situated off to one side at the end of the ward. There were a couple of lounges and coffee table and sometimes a portable television in the breastfeeding room. Because there was no specific staff room on the ward, staff used the breastfeeding room for their meal breaks, unless of course it was being used for its named purpose.

The ward has a central reception desk, with an open office area located behind it. This reception and office area was the 'hub' of the ward; it was a congregation point for all staff, and visitors and parents often came to the raised counter to speak with the staff. The workspace at one end of the reception desk was the area used by the ward clerk; one computer and chair was predominantly for use by this person, and I observed the ward clerk's annoyance if people adjusted his chair or removed items from this workspace. The main ward phones were on the desk; and the monitor and controls for the entry door were located behind the reception desk. The reception desk area was sometimes tidy and organised, and at other times it was quite messy. The nursing staff kept a hardcover *Day Book* at the front desk, into which they wrote details of the patients in the ward, nurse staffing for the shifts, and notations about specific events or tasks for the day. This book was one way of sharing and emphasising some information, especially 'one-off' snippets that might easily be lost or forgotten. This book was updated throughout the shifts, and was one reliable resource that I used on my visits to the ward to confirm which nurses were on duty and to which children they were assigned.

Figure 5.2 Photograph of ward office area and ward reception desk

An open office area was located behind this central reception desk, and was only accessible from the staff side of the reception area. I noted on my visits to the ward that this office was usually quite untidy. Nurses would come into this room to look for patients' charts, which often had not been put away in their assigned place – a drawer of the filing cabinet at the reception desk. Sometimes the charts had been left in the office area by staff who were called away before they had completed writing

their notes. Charts that belonged to expected admissions, including those of children who returned to the ward regularly, such as those undergoing a course of chemotherapy, were kept on specific shelves in the office. A small printer, facsimile machine, another computer, and the portable phone recharging unit were also located in this office area. A whiteboard and a couple of noticeboards were in this office, but there were many more notices around the walls than could fit onto the noticeboards. Folders containing reference materials, nurses' rosters, and a communication book for the use of nurses were also to be found in this office. A considerable amount of the reference material had not been reviewed for some time and was therefore potentially superseded by more recent literature; even some of the folders were quite old and had been 'recycled'. Some of the material was related to initiatives, such as a patient dependency system, that were no longer in effect; other material was now available electronically. On my visits to the ward I sometimes deduced that some of the textbooks were being used because they had been left open when staff were called away. I observed that one particular enrolled nurse frequently arrived early for her afternoon shift and used the extra time to read the textbooks. The nurses made several attempts to organise the notices and reference materials, but any sense of organisation soon disappeared.

The office area was also used for social gatherings, and staff shared cake and pizzas on special occasions, which seemed to me to occur frequently. Sometimes, the doctors brought morning tea to share, to say 'thank you' to the staff. Humour was evident in many staff interactions and in the interviews I had with the nurses, and the office area was also a place where staff could share jokes. It was an area largely

perceived to be the domain of nursing staff, especially 'after hours' in the evenings, during the nights and over the weekends. The Internet was an additional cost on the ward's budget, and nurses could access this from the computer in this office area by the use of a 'shared' password. This Internet access was provided to all staff on the computers in the on-site library, but not in all hospital wards. However, e-mails and the Health Department's Intranet could be accessed from all computers throughout the clinical areas. Reference databases such as *Medline*, *CINAHL* and *Cochrane*, and some websites, were also provided via the Health Department's Intranet. On numerous occasions I heard nurses comment that the doctors should not monopolise the computer in the ward's office area; the nurses assumed that the medical staff were able to easily access the pathology or medical imaging reports from the computer in the separate doctors' office.

There was no area available on the ward where staff could discuss matters in private, such as the treatment plans for children; the office behind the reception desk did not have a door and hence was not soundproof. Nurses had no specific office available to them to use for education sessions or when handing over from shift to shift; they either used the open ward office, breastfeeding room or parents' lounge for these purposes. There was a small office on the ward allocated for the sole use of the doctors. The other locked office, initially used by the Clinical Nurse Consultant, was reallocated to the new Nurse Unit Manager when she joined the staff during this study (refer to Figure 5.1). Since then, the part-time Clinical Nurse Consultant has used the office located just outside the less frequently used (swipe card access only) entrance to the ward; that is, the office used by previous Nurse Unit Managers. No

ward office was provided for the express use of the social worker, physiotherapist, occupational therapist and dietician who were allocated to the paediatric services; they had their offices in their respective departments away from the ward. These allied health personnel used the general staff area when on the ward for purposes such as writing in children's charts, making phone calls, and discussing management plans for the children. The collective term 'allied health' is used by the state's health service to refer to several different categories of health professionals, including social workers, physiotherapists, occupational therapists, speech pathologists, dieticians and psychologists. When I have used this term it has either been for expediency, or to preserve anonymity of individual professionals. It is not intended to trivialise their individual expertise.

On my initial visits I noted, and indeed was somewhat taken aback by, the numerous signs around the ward that displayed rules for the use of the different rooms and equipment. For example, in the playroom I saw three signs, worded slightly differently, that referred to the need for children to be supervised at all times whilst in this room. Nonetheless, groups of children often played in the room without the presence of an adult. There were other signs stating that the playroom would close at 7:30 pm each night; therefore the television would need to be switched off before that time. The televisions in the bedrooms were required to be switched off by 8:30 pm, even those in the single rooms. On several occasions during the fieldwork I heard staff enforce the rule *'no hot drinks are allowed in the ward'* (*for example, field notes, 04-01-2005*). Parents were permitted to make and consume a hot cup of tea or coffee in a specially-allocated room, and staff could make a hot drink in the

kitchenette and consume it in the almost-adjacent breastfeeding room they used for tea breaks; but no hot drinks were to be consumed in other areas of the ward. This rule was recognised to be for the safety of the children, who might scald themselves if hot liquids were spilt. I did occasionally notice a staff member take a hot drink into the office; this was usually late at night when there was no likelihood of a child being in that area. By way of contrast, I never witnessed some of the other rules being enforced. For example, the rules that asked visitors to wash their hands on entering and before leaving the ward, were not seen to be actively enforced, even though these rules also have safety implications for the patients and families. I concluded that it is likely to be much less confronting to remind parents not to have hot drinks near children, than to suggest to others (health professionals included) that their hands needed to be washed.

The ward's nursing staff establishment was 22.3 full time equivalents (FTE) at the commencement of the fieldwork phase of the study; of the 30 nurses rostered to the ward, only nine were full-time. The part-time nurses were rostered between one and eight shifts each fortnight. There were various levels of nurses appointed to the ward, the most senior nursing positions on the ward being that of the full-time *Nurse Unit Manager* and the half-time *Clinical Nurse Consultant* (both designated as Nursing Officer 3, re-designated as Nursing Officer 4 prior to the completion of the study). At the commencement of the study, there were seven nurses (5.3 FTE) appointed at the next most senior nurse level on the ward, the *Clinical Nurses* (designated as Nursing Officer 2); a couple of these nurses were 'acting up' at this level. In terms of numbers and FTEs, most of the nursing staff of the ward were *Registered Nurses*,

appointed at Nursing Officer 1 level. There were five (4.2 FTE) *Enrolled Nurses*, all of whom were 'endorsed' to administer certain medications. Two of the Enrolled Nurses had been appointed as *Enrolled Nurse – Advanced Practice* just prior to the commencement of the study in recognition of the work that they had been doing *(Interview "I", 04-05-2005, line 976).* Additionally, within each of the categories of nursing staff, there were different pay-points that represented years of experience at that level. The staffing establishments for all wards, with respect to both the FTE and the skill mix, are calculated according to the acuity of the nursing care required to be provided to the patients, and the legislated scope of practice of the different categories of nursing staff. Hence, it is not possible to directly compare the staffing of the Children's Ward to staffing of other wards.

However, the formal hierarchical structure of the staffing was not unique to the nursing staff of the Children's Ward; it applied in other wards. There were attempts to 'break down' the formal hierarchy within nursing. For example, the addressing of colleagues by their first names only was standard practice, with nurses often not knowing the surnames of their colleagues. Nurses usually used both first and last names when referring to senior nursing staff at Nursing Director level and above. Despite this apparent informality, there were occasions when the differences in power associated with titles, roles or level of nursing appointment were apparent. For example, after I observed a Registered Nurse proficiently guide a less-experienced Registered Nurse to perform a nasopharyngeal aspirate for the first time, the experienced nurse told me that she did not "like having a 'boss-like' person watch her; not bossy, just someone in my [Nurse Manager] position" (*field notes, 21-*

10-2004). However, in the course of a general discussion about power differences, the District Director of Nursing expressed her bewilderment at the persistence of such an obvious sense of hierarchy in the face of attempts to dispense with it, and contemplated whether these hierarchical divisions allowed the nurses "to feel they do not have to take responsibility" (*as recorded in researcher's journal, 02-11-2004).*

Children, parents, visitors and staff from other areas would not have been able to differentiate between the different categories and levels of nurses by reference to the uniforms they wore. One nurse tended to wear a white uniform dress, which had been superseded some time previously by the corporate standardised uniform, that is, navy skirt, shorts or trousers, with a patterned blouse common to both enrolled and registered nurses. Some nurses often chose to wear brightly-coloured or tropical-patterned shirts with navy shorts. I concluded that this choice was aimed at putting the children at ease. During an interview, one of the nurses explained her reasons for electing not to wear a uniform, relating a story about how, during a nurse's strike "back in the eons of time", most of the nurses decided not to wear uniforms, and how during the strike she had noticed that the usage of analgesia on the ward seemed to be considerably less on most days, despite the fact that there were five children with burns admitted at that time. After the strike, this nurse undertook a retrospective audit of the amount of analgesia used and whether or not nurses wore uniforms, as discussed in the following excerpt (where R is the researcher, and N is the nurse, a convention I have used throughout the thesis).

> N There were two people who never got out of uniform, and I was one of them. Because I was, that's the most unprofessional thing not to wear a uniform. How people ever know who you are and all that sort of stuff. So I was one of them. Um. And there was another girl who never stopped

wearing uniform. And when I actually looked at it, when people were wearing civis, they didn't need to use as much analgesia. In fact it was about half.

R So there was actually a definite decrease?

N There was a definite decrease. And um, I was absolutely shocked. (*Interview "H", 02-05-2005, lines 446-457*)

This nurse has not worn a uniform since then, preferring to wear ordinary street clothes. Some of the nurses who had worked on the Children's Ward at the old hospital had special ward polo shirts with the previous hospital's name. At the commencement of this study, new 'hot pink' ward polo shirts had been designed, and numerous nurses had purchased them. However, to my knowledge, only one bulk order was placed, so nurses who subsequently joined the ward's staff did not have the option of wearing this unofficial 'Children's Ward uniform'; and, toward the end of the study, I noticed many more corporate shirts because of the considerable influx of new staff over that eighteen-month period.

There was only one male nurse rostered to the ward, and he moved to another health service district approximately six weeks after the commencement of the study. One other male nurse commenced in the ward after the interview phase of the study was completed. Throughout the study, the nurse staffing of the ward was not static, as I found out when I periodically checked the names of nurses on the rosters. Several nurses went on maternity leave during the study, and others returned from maternity leave, prompting a younger nurse to warn others not to "sit in the chairs" (*Interview "R", 22-05-05, line 944*). The turnover of nursing staff, periods of leave, nurses 'acting up' or seconded to other units, and the number of part-time staff were not unique to this ward, but they did have implications for the day-to-day management of

the ward. Nurses did not like being deployed to other units that may have been more short-staffed on a particular shift and I observed that they were not always as friendly toward staff deployed to Children's Ward as they could have been. During the study, the nurses were very interested in the negotiations in progress in relation to a new Enterprise Agreement, which subsequently resulted in increased financial remuneration for nurses, and resulted in a reclassification of the middle and senior levels of nursing.

The Nursing Services was instrumental in developing the *Business Planning Framework* that considers both supply and demand of nursing staff, rather than more traditional staffing models that consider only supply of nursing staff. That Business Planning Framework has since been adopted in all the State's public hospitals. Under this framework, an *'hours per patient day'* model is used when allocating nurses to each shift. The agreed 'hours per patient day' ratio for the Children's Ward was higher than for some of the other general adult wards. The ratio is not rigid, but nurses did use it as a way to 'demand' extra nurses for a particular shift. On several occasions I noted in my observation journal discussions between nurses relating to the number of staff that 'should' have been rostered, and a lack of agreement as to what the adequate staffing should be. Nurses frequently wanted to staff for possible admissions. On such occasions, the most senior nurse was often put in a difficult situation, knowing that a shift may well become extremely busy, yet not being able to staff for 'what could be'. It must also be remembered that parents helped with the care of their children, and this was something that the Nurse Unit Manager reminded nurses of at a ward meeting in the context of a contested discussion about the

adequacy of staffing, the appropriateness of the allocation ratio, and an over-budget expenditure on nurse staffing (*field notes, 07-12-2004*). If there were considerable increases in the dependency of the care provided to the children it would have been possible for changes to the hours per patient day ratio to be negotiated by the submission of a written business case. However, I did not hear any individual nurses discuss the need for permanent changes to the staffing model. Nurses across the hospital recognised that they needed more staff when there were recently-graduated nurses rostered to a ward, or when there were nursing students on clinical placements in the ward. Both these types of situations occurred whilst I was observing in the Children's Ward.

I began the study with the knowledge that there would be many different reasons for children to be admitted to hospital. I learnt that some 37 different Consultant doctors admitted children to the Ward; and that there were approximately 160 different admission types (diagnostic-related groupings or DRGs). According to the revised *Ward orientation resource manual* (May 2005), there are approximately 2200 acute admissions per year, 35 per cent of which are children who undergo surgery (general; orthopaedic; ear, nose and throat; dental; neurosurgery; or plastic surgery). The 'Top Ten DRGs', as per the list provided to me by the Acting Clinical Nurse Consultant in mid-January 2005 were:

1. Gastroenteritis, less than ten years age
2. Otitis media and upper respiratory infections without complications
3. Tonsillectomy and adenoidectomy
4. Bronchitis and asthma

5. Injury to forearm, wrist, hand or foot
6. Whooping and acute bronchitis
7. Viral illness
8. Respiratory infections, inflammations
9. Otitis media and upper respiratory tract infections with complications
10. Cellulitis

However, I was repeatedly surprised, after listening to the shift handovers, by the range of diseases, disorders and family situations with which the nurses had to be familiar. Nurses needed a very broad knowledge of paediatric nursing, detailed knowledge about unusual diagnoses, including some complex paediatric syndromes, and knowledge about the more commonly encountered diagnoses; the self-description '*Jack of all trades, master of none'* was used several times by one of the Clinical Nurses. Handovers provided an opportune time for me to glean some understanding of the depth of knowledge possessed by the staff, and an appreciation of how difficult this must be. I was unfamiliar with much of what the paediatric nurses regarded as routine, and would feel like a novice if I was actually nursing these children myself (*as recorded in my field notes, 01-09-2004*). Many of the children were Indigenous; many did not live in the local area. The hospital provided cultural awareness training, but I do not know how many of the staff had attended this. Only one of the nurses to my knowledge had worked in a local Indigenous community, and another had worked with Indigenous clients in another state. Nurses also needed to know about significant changes associated with new legislation relating to child abuse and neglect that was introduced during the time of this study.

Nurses and other staff attended the mandatory education sessions about these new legislative requirements, and completed the associated workbooks. Although nurses needed to deal with situations relating to child abuse or neglect on a regular basis, and unfortunately children did die in hospital during the study, most of the time the ward was a happy place.

When I visited the ward, I felt like I was stepping into another world. It was obviously a place for children: pictures, murals, toys and Nintendo machines were visible and often audible; sometimes I heard crying, sometimes laughter, oftentimes the noises of children playing. Nurses may have been cuddling or feeding a child at the desk, or children may have wandered into the office with a nurse to choose a favourite Nintendo game. The lights were sometimes dimmed during the afternoon rest period, and the ward lighting was turned down much earlier in the evenings than would be usual on an adult ward. The children stayed variable lengths of time in the ward, and sometimes this was less than a day, as in the case of those children admitted to the ward following day surgery but not requiring overnight admission. Hence, on most days the nurses had to acquaint themselves with several new children and their families. I was surprised by the number of people who could be in the ward at any one time. Sometimes it seemed as though everyone was there: consultant doctors with junior doctors and medical students, a pharmacist and a pharmacy student, nurses from the oncoming shift together with nurses preparing to go off duty, student nurses on clinical placement, allied health personnel, ancillary hospital staff, staff wheeling children on trolleys to or from Theatre, parents and other visitors. At

these times, the nurses described the ward in terms such as *'chaos'*, *'controlled chaos'* or *'just controlled'*.

Nurses routinely advocated for the children. This was particularly evident when children were admitted for surgery, were placed on the scheduled or 'fast-track' operations lists, and needed to refrain from eating and drinking for certain time periods preoperatively. Sometimes the surgery was considerably delayed and another theatre timeslot would need to be scheduled, and on some of these occasions the nurses expressed disagreement with anaesthetists, and with each other, as to the length of time that children of different ages needed to fast prior to being anaesthetised. For example, information was conveyed at one handover that an infant's surgery was postponed because a mother kept breastfeeding into the time period when the child should have been fasting. An experienced nurse commented "breastmilk is so easily digestible – you'd think they [surgeons] would have gone ahead" (*field notes, 25-08-2004*). When conducting initial meaning reconstructions on this excerpt as per the methodology, possible validity claims (meaning fields) include:

> *Possible subjective claim:*
>
> "I [the nurse] do not believe that the child's care would be unduly compromised by continuing to allow the child to be comforted through breastfeeding" (AND)
>
> *Possible objective claim:*
>
> "It is not possible to ascertain how much milk the infant had consumed" (AND)

Possible normative-evaluative claim:

"It was wrong for the anaesthetist to delay the infant's surgery, even if only for a few more hours".

On another occasion, nurses expressed different degrees of surprise at preoperative orders, as per the following event one week later (*field notes, 01-09-2004).* The morning shift nurses were talking to those on the afternoon shift about a child who was to be placed first on the next day's scheduled operating list. The Anaesthetic Resident, who was present in the room, was happy for the child to have Panadol (for pain relief) up to one hour prior to theatre, and fluids (water) up to two hours. A nurse with many years of experience on the ward said "Two hours?" with a look of surprise on her face, and the facial expression of another Clinical Nurse also indicated almost as much surprise at this short fasting time. This information from the doctor clearly conflicted with information given on previous occasions. Validity claims (meaning fields) could include:

Possible subjective claims:

"I am annoyed by these constant changes; I wish doctors could make up their minds" AND/OR

"This doctor does not really know what she is talking about; she is not a paediatrician" AND/OR

Possible normative-evaluative claims

"This doctor should listen to the nurses; we have more experience with caring for children" AND/OR

"We'll listen to that advice, but we will manage the fasting times as we usually do".

Midway through the interview phase of the study, I located a short article (Strachan-Bennett, 2005) which alerted the reader to new nursing guidelines that were soon to be published by the United Kingdom's Royal College of Nursing, to standardise practice in relation to fasting. The guidelines were based on a Cochrane Systematic Review, and hence were viewed as credible. The following portion of an interview transcript relates to this article.

R If I show you this article here, that I happened to find the other day
N Don't ask me to review it [laugh]
R It's only part of an article
N Mmm
R If I told you that children can drink up to 2 hours before surgery
N Yep
R Would, and you read this
N Uh hmm
R Would you think that there would be something in your practice that could change?
N Um. Trying to think what we do now for clear, it depends. Because clear fluids we usually go, um, can't remember if it's 2 or 4 hours. But there is a policy, there is a hospital policy on that which is probably very outdated [laugh]. But for my practices, like I might read that and say "OK, well this is what they say and that's well and good, but this is what the hospital wants me to do"
R Uh hmm
N So, I'd go by that, hospital policy.
R You wouldn't challenge the hospital policy?
N Oh, you could always ask the anaesthetist if you were so inclined, to say, you know, like you know, "I read somewhere that dadadada…",
R Well, I'll use the example of fasting
N Uh hmm
R Because I'm, a couple of times at least when I was observing it seemed as though, it came up in the conversation that the kids had been fasting
N Uh hmm
R And fasting for quite a lot more than what the policy is
N Yep
R And,

N That sometimes relates back to the reg[istrar] or resident and they might just have come from surgical or wherever else, and not done any kids and just say, "OK, well they're for theatre tomorrow so fast them after midnight"
R Right
N And so for us we say, "Ok, but you're fasting a 2 year old after midnight. You have to put a drip in, you have to get fluids", or you know, "When are they are going to theatre, how long will they be fasting", if they are fasting after midnight. Whereas an adult you might not be so
R […unclear] You've been in kids ward for quite a while, so would a new person in that ward
N Um
R Think to question
N Possibly not
R Fast from midnight
N Depends. Probably not. Like a new grad or somebody like that probably wouldn't.
R Mmm
N Um. It wouldn't be something that would trigger them to think "oh hang on, that's not what we normally do"
R mmm
N Yeah, so I would say not. But then, they should be working with somebody who, you know, is a bit more senior anyway
R Uh hmm
N She might say to them, "oh no, not, you'll have to get fluids through them. The policy for kids is, the hospital's policy for fasting is…"
R Would you say that all nurses are up to date?
N No
R So working with someone senior may not be helpful either?
N Um, most of the senior ones, I think a lot of the senior nurses who have been there for a little while would know. Um, it would be the more junior, or just casuals or first years or someone who'd only been there you know for a few weeks. I'd say the vast majority would probably realise that kids shouldn't, small children shouldn't be fasting for that long. (*Interview "L", 23-05-2005, lines 488-464*)

Possible claims being made by this nurse include:

"Junior staff are not expected to know" AND

"Paediatric experience is of most importance, for doctors and nurses"

AND/OR

"I feel that I can challenge the doctors" AND

"Hospital policy can override evidence and decisions" AND

"There is a difference between preparation for emergency (unplanned) surgery and planned surgery".

The topic of fasting times was also discussed within another interview. This nurse indicates that fasting times can be too long, whether the surgery is planned or an emergency.

R What about fasting times?
N Oh yeah, but you know, these anaesthetics that come through and say "Right, fast them from midnight" and they'll be third on the list and then, you know, maybe even, even some of the younger ones like the six-month old or seven-month olds don't need to be fasted that long. And third on the list these days is not, you know, like mid-morning, it can be late morning you know
R Mmm
N What happens if something happens, you know, like, especially on fast track? It's totally different to ordinary lists isn't it? I mean these kids sit and wait and wait. Because I remember that last year didn't they do, the girls did something about that, how long they were fasting for and they just did a bit of a paper on the desk
R Did they?
N Just to see what was happening but I don't think anyone did any research into it. (*Interview "S", 07-07-2005, lines 769-786*)

A little later in this same interview, the article was presented for the nurse's comments.

R I came across this the other day
N Ahh. Clear fluids, yeah after 2 hours [reading the information about fasting times from the United Kingdom]. Ohh. That's interesting
R Mmm
N Because why can't they drink clear fluids, you know….
Oh , ok yep, yep……. Should give that to [?? A particular doctor, anaesthetist]. That would be fun because then you could stick it to them and go "No", you know like. (*Interview "S", 07-07-2005, lines 820-837*)

These excerpts convey that nurses could explain and expand upon some of my field observations; and that sometimes the meanings and claims made by the participants

could compete with each other. The last excerpt also hints at an underlying aggressive or competitive relationship between some nurses and some doctors, and is more revealing given that the particular comment was out of character with that particular nurse's usual behaviour.

5.3 Effects of the researcher's presence in the Children's Ward

Very early in the observation stage of the study, an enrolled nurse said that she thought it was good that I did not know the ward and hence would not hold preconceived ideas about what I expected to find. She felt that I "would see things that they took for granted" (*field notes, 17-08-2004*). She also indicated that she felt that I would 'blend in' and people would forget that I was there. I had already considered whether my presence would lead to a 'Hawthorne Effect', with the nurses acting differently when I was present, and the hospital's ethics committee had considered this a potential risk. This nurse's comments lent support to my reassurances that, although this was a risk with all ethnographic research, it could be minimised.

With this in mind, I occasionally took the opportunity to ask nurses on the Children's Ward if they had noticed any changes in their colleagues' behaviours during my periods of observation. That is, I was interested to discover whether the presence of the researcher had led to a Hawthorne Effect, and whether the strategies that I had implemented to address the concerns of the ethics committee as explained in Chapter Four had been effective. The adoption of a more passive observer role at the beginning of the study, and a gradual increase in interaction with the nurses as the

study progressed, were found to be helpful approaches. At the end of the first month of observations, several nurses commented about changes that they had noticed on the ward, which were most noticeable at shift handovers. I was told that nurses, who had been in the habit of 'grilling' others about why certain actions had not been done, refrained from doing so if I was present. Additionally, the handover session took less time if I was present compared to when I was not there. The nurse who reported these changes to me said that she had thought they were for the better (*field notes, 31-08-2004*). The following week, the same nurse confirmed that handovers were nicer and more pleasant if I was there (*field notes, 09-09-2004*). Another nurse offered the information, without specific prompting, that when I was at a shift handover session, nurse refrained from their more usual behaviour of 'blaming others' *(field notes, 07-09-2004).* However, I noted that some nurses still 'pounced' on each other even though I was present (*see, for example, field notes, 22-09-2004*).

I also explored the effects of my presence in the Children's Ward in at least four of the formal tape-recorded interviews; responses differed. One of the senior nurses said "I haven't seen any evidence of that [Hawthorne Effect] at all. None whatsoever." This nurse indicated that this was because of the approach that had been adopted, and because I was also a nurse, as continued in the following transcript excerpt.

R Have you noticed any changes with staff, or been alerted to changes with me being here?
N Not at all. I think the way you've done it is, has worked really well because you're just seen as part of the group. You know you come in and see the different things but because I think it's been done in such a way that it's slow and integrated, it's been not a major issue. Plus you're also a nurse
R So it would be different if I was a different, another profession?

N Yeah I, I believe yes. I, because nurses, you come up against a whole lot of different resistance. It doesn't mean to say that you can't get through that resistance but I think in the initial phases because you are a nurse and your personality lends itself that people can ask questions and you're quite open and free to give that information um you know they don't see that as being, ah, particularly threatening. You put somebody in a bunch of nurses, you know they don't know, they are not from their profession they view them as being very, very challenging
R Mmm
N And threatening. (*Interview "A", 21-09-2004, lines 500-522*)

Another nurse said that she had not noticed any change.

R But did anything change when I was there?
N I don't think so [laugh]
R No that's ok
N Um, yeah as far as our practices or
R Practices, or
N Whether we showed more interest in research or anything. I, I don't think so. Mmm, not that I picked up on. I'm just not very perceptive about those things. (*Interview "L", 23-05-2005, lines 1082-1089*)

In contrast, other nurses commented on transitory changes in behaviour if I was there, before reverting to their usual behaviour.

R Do you recall if anything changed when I came down here?
N Oh [laugh]. People would talk about research more and
R Would they?
N Like, that sort of thing happened but
R Then they slipped back to the usual?
N Yep, yep. Seeing you on the ward I think triggered people and, but you know like
R But that's what I would have expected, initially they'd sort of "oh well, we better change a little bit"
N Yeah
R But then I've become part of the furniture and
N Yep, yep
R People don't really change
N Yep, yep. (*Interview "S", 07-07-2005, lines 1539-1553*)

But sometimes the nurses started to pay more attention to their behaviour if they became aware that I was writing in my field journal.

R Do you think anything changed when I was down there?
N No. Maybe the first couple of weeks but after it we just sort of forgot you were there [laughed]. That sounds terrible doesn't it? You know, you're just in there. Except when you started writing what you were saying, that was a bit. If you were having a conversation, next thing you know you're in the corner going [acted out writing]. Like, is she writing what I just said? Did I just say something bad? [Both laughed] Stuff like that I think.
R Well, that's what we thought would happen
N Mmm. You forget to watch your ps and qs until you start picking that pencil up. (*Interview "R", 27-05-2005, lines 1389-1401*)

Whilst I was often questioned as to whether or not the nurses were different, I believed that my presence was not unduly disruptive. Formal and informal interviews with nurses allowed me to explore any inconsistencies I had noticed in their behaviour and what they were telling me. Nurses could and did move to areas where I did not normally go, such as the locked medication room, if they wished to pursue conversations or undertake tasks that they did not believe I needed to be part of. Overall, however, I had a feeling that the nurses were engaging in honest and open communication with me, and there were certainly no unpleasant exchanges. There were even examples of nurses being protective of my researcher role, when it seemed I might be treated as if I were in my formal Nurse Manager role. For example, when a nurse approached me on one of my early visits to the Children's Ward about matters relating to my work role, another nurse commented in a light-hearted way that I was not on the ward for that reason at that time (*field notes, 17-08-2004*).

5.4 The nurses' prior experience of research

As explained in Chapter Four, questionnaires were distributed to staff in the Children's Ward and the Neonatal Unit, two of the clinical units within the Women's

and Children's Institute, some three months into the fieldwork phase. There were twenty-two respondents from the Children's Ward: fifteen nurses, three doctors and four allied health staff; and twenty-three respondents from the Neonatal Unit: twenty nurses and three doctors. The detail is provided in the accompanying tables.

I was not surprised that there was greater variation in the nurses' highest level of completed education, ages and years of experience, when compared to the other staff groups (refer to Table 5.1). The entry-level educational qualifications for Enrolled Nurses and Registered Nurses have been raised over time. Enrolled Nurses now require a diploma from a Tertiary and Further Education (TAFE) College, and Registered Nurses require a university degree. From the fieldwork phase, I knew that several Registered Nurses on the Children's Ward had upgraded their initial hospital certificate with tertiary qualifications. The respondents from the Neonatal Unit generally had higher levels of formal education than their counterparts in the Children's Ward.

Table 5.1 Highest level of formal education completed by respondents to staff questionnaire, Children's Ward and Neonatal Unit

	Children's Ward				Neonatal Unit		
	Nurses (n=15)	Doctors (n=3)	Allied health personnel (n=4)	All respondents combined (n=22)	Nurses (n=20)	Doctors (n=3)	All respondents combined (n=23)
Year 10	1	-	-	1	-	-	-
Year 12	1	-	-	1	3	-	3
Certificate	2	-	-	2	2	-	2
Diploma	2	-	-	2	1	-	1
Bachelor degree	6	1	3	10	9	-	9
Honours	-	-	1	1	-	-	-
Graduate certificate, diploma	3	-	-	3	4	-	4
Postgraduate degree	-	2	-	2	-	-	-
Masters	-	-	-	-	1	2	3
PhD	-	-	-	-		1	1

All except two doctors from the Neonatal Unit were female. One doctor respondent from the Children's Ward did not indicate gender: the other 21 respondents identified that they were female. At the time of distribution of the questionnaires, there were no male nurses rostered as staff of the Children's Ward. In 2004, only 9.1 per cent of employed nurses in Queensland were male (Australian Institute of Health and

Welfare, 2006, p18). Also, in 2004, the average age of employed nurses in Queensland was 44.4 years; the nurse respondents from the Children's Ward were younger than this, and had relatively few years of experience. The doctor and allied health respondents also had few years of experience (refer to Table 5.2). However, the nurse and doctor respondents from the Neonatal Unit generally had more years of experience and were older than their paediatric counterparts.

Table 5.2 Age and years of experience in current profession of respondents to staff questionnaire, Children's Ward and Neonatal Unit

	Children's Ward				Neonatal Unit		
Age	Nurses (n=15)	Doctors (n=3)	Allied health personnel (n=4)	All respondents combined (n=22)	Nurses (n=20)	Doctors (n=3)	All respondents combined (n=23)
25 years or younger	2	1	1	4	3	-	3
26-35 years	7	2	2	11	5	-	5
36-50 years	5	-	1	6	8	2	10
Older than 50 years	1	-	-	1	4	1	5
Years of experience in current profession							
Less than 5 years	6	3	2	11	4	-	4
5-10 years	5	-	1	6	4	-	4
More than 10 years	4	-	1	5	12	3	15

Only half of the nurse respondents had studied research at university, a reflection of the variability of their qualifications. In contrast, all of the allied health and doctor respondents had studied research at university, reflective of their requisite tertiary-level qualifications. Staff from the Neonatal Unit indicated greater involvement with research and greater experience with disseminating nursing research than did the staff from the Children's Ward (refer to Table 5.3). Four of the Children's Ward nurses who had the opportunity to respond to the questionnaire had completed an action-based research project prior to the commencement of this study; additional projects had previously been completed by other nurses who were not working on Children's Ward when the questionnaires were distributed. During the course of this study, I received seven more 'action research projects' from Children's Ward, undertaken by eight different nurses, three of whom contributed to more than one project.

Table 5.3 Involvement with research by staff of the Children's Ward and the Neonatal Unit

	Children's Ward				Neonatal Unit		
	Nurses (n=15)	Doctors (n=3)	Allied health personnel (n=4)	All respondents combined (n=22)	Nurses (n=20)	Doctors (n=3)	All respondents combined (n=23)
Studied at least one research subjects at university	7	3	4	14	11	3	14
Done an 'action research' project	3	2	1	6	6	1	7
Written a submission to an Ethics Committee	2	-	1	3	1	3	4
Collected data for research initiated by:							
Nurses	7	-	-	7	10	-	10
Doctors	2	-	-	2	4	2	6
Others	-	-	-	-	3	-	3
Written a research-based article, or conference presentation	1	-	2	3	6	3	9
Other involvement with nursing research	4	-	-	4	6	1	7

There was considerable variation in the accessing of web-sites by the different staff groups. All these sites were available from computers in the clinical area and hospital library (refer to Table 5.4).

Table 5.4 Recent experience with accessing literature by staff of the Children's Ward and the Neonatal Unit

	Children's Ward				Neonatal Unit		
Had accessed these sites within the preceding 4 months or so	Nurses (n=15)	Doctors (n=3)	Allied health personnel (n=4)	All respondents combined (n=22)	Nurses (n=20)	Doctors (n=3)	All respondents combined (n=23)
CINAHL, Medline databases	5	2	1	8	9	3	12
Joanna Briggs site	1	-	-	1	3	1	4
ARCHI network	-	-	-	-	3	-	3
Cochrane Collaboration	-	3	1	4	4	3	7
Internet	9	1	4	14	16	3	19
Other	2	-	1	3	3	-	3

From my work role, I knew that neonatal nurses routinely submit posters for presentation at national perinatal nursing conferences. Neonatal nurses indicated more recent experience of accessing research literature than did the paediatric nurses; no paediatric nurse respondent had accessed the Cochrane Collaboration site, and fewer had accessed common literature databases. The paediatric nursing staff could

use a group password to access the Internet from the computer in the ward's office area. From subsequent interviews with the paediatric nurses, it is likely that there was confusion between the Internet and Intranet. Several of the interviewees claimed to have used the Internet to look up, that is 'research', policies and procedures when in fact they were referring to the Health Department's Intranet sites from where such information is able to be retrieved from all computers throughout the hospital. Discussion of the different definitions that nurses ascribed to 'research', such as the use of the word to refer to information retrieval, is incorporated into the analysis chapters.

A greater proportion of allied health and medical staff, compared to nursing staff, reported that they regularly read professional journals; although only half of all respondents reported that they regularly read professional journals (refer to Table 5.5). This frequency of reading professional journals was considerably less than that reported quite some time ago by nurses in other Australian studies as introduced in the literature review (for example, Retsas, 2000; Sellick et al., 1996).

Table 5.5 Reported regular reading of professional journals by staff of the Children's Ward and of the Neonatal Unit

	Children's Ward				Neonatal Unit		
	Nurses (n=15)	Doctors (n=3)	Allied health personnel (n=4)	All respondents combined (n=22)	Nurses (n=20)	Doctors (n=3)	All respondents combined (n=23)
Regularly read professional journals	7	2	3	12	9	2	11

5.5 Interviews

Five of the nine nurses who were formally interviewed no longer work in the Children's Ward; three of those five have moved away from the Health Service District, and one has left nursing altogether. The interview responses identified a number of dominant cultural themes, although the individual nurse's support for them was inconsistent. Tensions were evident, and these tensions were also evident in the observational data. The data obtained from the formal interviews has been interwoven in the description of the environment, and in the analysis and interpretations of the dominant themes in the following chapters.

5.6 Data from the 'Working Party'

Although the nurses were expected to work in partnership with each other, on many of my visits to the ward I noted that either this 'Partnership Model' was not being enacted as it was intended to be, or that the partnerships on the ward were not equal with respect to their skill mix or patient load. Difficulties such as these with the model of care delivery adopted by different nurses came under closer scrutiny by the Nurse Unit Manager, and prompted the establishment of the 'Working Party' as described in Chapter Four (4.7).

The working party did not achieve all of its aims because it was abandoned prematurely due to competing demands from other ventures. Although this is not unusual in the clinical area, it was disappointing to the staff members involved. As a matter of expediency, the written minutes of meetings provide only a summary of conclusions agreed to by all members of the working party; the video-recordings confirm that all members actively contributed to the meetings, and provide numerous examples of discussions being driven by different perspectives. The Enrolled Nurse, Clinical Nurse and Nurse Unit Manager attended all the meetings, and consulted research literature between meetings to inform their discussions; in particular, the Nurse Unit Manager informed her contributions by analysing data and drawing from different documents, such as the strategic plan. The working party did devise and administer a questionnaire that aimed to ascertain staff satisfaction prior to the introduction of a revised partnership model. Only one meeting took place after the responses to the questionnaire were collated; the questionnaire was not used to re-measure staff satisfaction because no trial of any new model of care eventuated.

The inadequacy of using the parents' room for a meeting was painfully obvious from viewing the video-recording of the last meeting, which was held in June 2006. Workspace was extremely limited in this room. Furthermore, if the meetings had been conducted in a room with computer access, then minutes could be typed as the meeting progressed, and other documents could have been easily retrieved during the meeting. Although the meeting had been planned, two months had elapsed after the preceding meeting, and it took four minutes for the clinicians to organise their paperwork. The group commented upon the results of the questionnaires, and there were looks of surprise at some reactions to the findings. This was open communication in action; if it had not been open, then these looks of surprise would not have been so evident. As the meeting progressed, there were discussions about the scope of practice of different levels of staff; and differences of opinion were once again openly expressed. Each member respectfully challenged statements made by the others throughout the course of the meeting.

The Nurse Unit Manager revealed her vested interest in the topic, and had further used the responses to the questionnaire to inform discussion as to how the ward's strategic plan could be modified to take these responses into account. She was responsible for this strategic plan, and for pursuing the needs of the ward at a higher level in the organisation. Changes in the future directions of the ward would most likely have budgetary implications that would need to be planned for. "It is very difficult to maintain a paediatric focus in an adult general hospital" (*from video-recording, meeting 16-06-2006, at 13:35 minutes*). It was considered prudent to use

the existing structures such as the Paediatric Outreach Service and Child Health, to increase this focus and expand the horizons of the Children's Ward staff.

There was discussion as to the degree to which paediatrics is different from other specialities, and the degree to which the needs of the Children's Ward are different to other departments such as the Emergency Department. The numbers and skill mix of nurses needing to be rostered to each shift in the Children's Ward would be affected by any model of nursing care implemented, and by external factors such as the legislated scope of practice of the different levels of nurses. Also, the type and number of surgeons and their operating lists affected the number of nurses needed in the ward. In such discussions, all members of the working party drew upon their extensive paediatric clinical experiences to support their views.

5.7 Effects of the research on the participants

A stated goal of critical qualitative research is that of emancipatory change of those who participate. Due to my researcher role, I certainly changed during the study, and some of those changes are discussed in the last chapter of this thesis. As a critical researcher, I hoped that some of the nurse participants would also change. However, the claim that others will change as a consequence of participating in such a study is contestable (see, for example, de Laine, 1997; Manias & Street, 2001). Even if such changes eventuated, I did not expect that I would necessarily be alerted to them and I accept that some could be very personal. However, I did become aware that some nurses, perhaps through "consciousness raising and praxis" (Fontana, 2004, p98)

began to challenge the status quo or began to question some of their routine behaviours.

For example, through the dialogical processes of an interview, one participant voiced a previously-unacknowledged frustration at the lack of recognition for her involvement in prior clinical research because she was not a Clinical Nurse. We were discussing what would need to change so that more nurses would become actively involved with research, and we had mentioned the possibility and implications of group projects with respect to equal involvement and equal recognition.

> N Yeah, I mean, I'm f[ine], I don't have, oh I must have an issues with that The fact that like with the sterilisation one, the fact that I had to have a level 2 oversee it and that person did nothing, that annoyed me, that's where that's come from, and that was [name of Acting Clinical Nurse provided]. (*Interview "I", 04-05-05, lines 750-755*).

Non-verbal communication, such as the tone of voice and facial expressions, supported the verbal communication. I noted that the nurse seemed genuinely surprised by what she was expressing for the first time. On a subsequent visit to the ward two weeks later, this nurse informed me that she had gone home and thought about our dialogue, and found "a wonderful article about horizontal violence" (*interview notebook, 18-05-2005*). The nurse had decided to raise another issue as to how a Clinical Nurse usually spoke to her in the course of a routine shift. This she did, and to her surprise the Clinical Nurse began to change her behaviour. The nurse said to me that she would never have taken this action if it had not been for the research interview, in which she had felt safe.

5.8 Chapter summary

This chapter has focused on describing the environment of the Children's Ward in considerable detail, as would be expected in an ethnography. I found the Children's Ward to be an extremely complex place, and it took a considerable time to gain an appreciation of this complexity. Some of the important aspects of the ward environment are:

- The 23-bed Children's Ward is one small part of the larger hospital, yet it has retained its sense of uniqueness
- The ward is light, airy, and well-equipped to care for the needs of children.
- It was a very social and, usually, a fun place to be. Humour was used a lot between staff and children, and between staff members
- There was a large variation in the general and paediatric nursing experiences of the ward's nurses. One recently-graduated Registered Nurse was in the Children's Ward as her first clinical placement; other nurses had worked there for longer than twenty years
- Children came from near and far; length of stay varied from less than a day to much longer; many underwent surgery. Nurses needed a considerable breadth of knowledge to care for the variation in diagnoses, from the everyday simple arm fractures to rare childhood syndromes.
- It was both a generalist and specialist ward
- There was a considerable turnover of nursing staff during the study. Notwithstanding nursing vacancies, there were generally thirty nurses rostered to the ward, the majority on a part-time basis

- Changes to nurses appointed at all levels occurred throughout the period. Some nurses gained experience 'acting up'; other experienced nurses elected not to 'act up' in higher duties
- Nurses did not always agree with each other
- Exposure to and involvement with nursing research varied. All Clinical Nurses had completed at least one project as required in their position descriptions; some nurses at other levels had also completed a project
- Change was a feature of the daily and ongoing functioning of the ward; some nurses eagerly accepted and adapted to these changes, others were less comfortable with change. These different positions were sometimes a source of considerable conflict
- Nurses could access the Internet from the computer provided on the Children's Ward's computer, a resource that was not provided on most other wards
- I felt welcomed, even by nurses who openly express their disinterest in nursing research.

The Children's Ward is one part of the larger hospital and it is appropriate, and consistent with the methodology, to locate the data in a broader context. I did not have a predetermined expectation as to what the data would reveal; as I immersed myself in the data several dominant themes emerged. Perhaps the two most important of these themes were *'Science'* and *'Identity'*, and the following three chapters contain an interpretation of the findings around these themes from a critical theory perspective.

Chapter 6: Interpretation and analysis from a critical theory perspective - in support of the dominant theme of 'Science'

6.1 Organisation of the analysis chapters

Consistent with the critical ethnography methodology, the aim of this and the next two chapters is to elucidate links between the micro-social data and macro-social theoretical concepts. The data reflected themes evident in the broader society outside of the hospital, of which the nurses were but a small part; two dominant themes that emerged from the data were those of *Science* and *Identity*[7]. Chapters Six and Seven are structured around a discussion of the theme of Science as a discourse and Chapter Eight is similarly structured around a discussion of the theme of Identity. Although the term 'discourse' has different interpretations (Crossley, 2005), I have used it in the sense of being "ways of forming knowledge that affect how we think, the way we act and what we say and write" (Manias & Street, 2001, p235).

Throughout this analysis of the data the following four questions, which are often asked from a critical theory perspective, have been heeded:

- Whose interests are being served?
- Whose reality is being privileged?
- Whose voices are being excluded?
- Who is gaining from the situation? (Jackson, Clare, & Mannix, 2003, p216)

[7] I have used capital letters for Science and Identity, when discussing the discourses or institutions in their entity.

This chapter, Chapter Six, focuses upon a presentation of examples from the study data that illustrate the discourse of Science as seen within the Children's Ward, and the theoretical arguments from the literature that explain the dominance of Science. Chapter Seven focuses upon examples from the study that illustrate alternative positions and literature that presents counterarguments to the discourse of Science. A similar format is followed for Chapter Eight with respect to the discourse of Identity. Strategies that nurses employed to cope with the resultant tensions between the discourses and counter-discourses are described in Chapter Nine, prior to proposing recommendations arising out of this analysis.

It has been difficult to decide upon the format that will best represent the complexity of the selected discourses, and several options have been explored. The arbitrary separation of the arguments and counterarguments relating to dominant themes is not intended to imply that these are dualisms, with no middle ground or shades of grey – critical theorists are always suspicious of dualisms. This schema was selected to present and highlight the major findings, and to integrate the monological, dialogical and material data obtained from the nurses, the ward, the nursing services, the health district and the broader health system where applicable, with the broader social systems. I have endeavoured to minimise duplication when selecting examples from the data to illustrate the arguments and counterarguments, and my interpretation of the data has been informed by the entirety of the critical ethnography; it is recognised that many examples could be interpreted differently, especially if they are removed from the context from which they came.

6.2 Chapter introduction

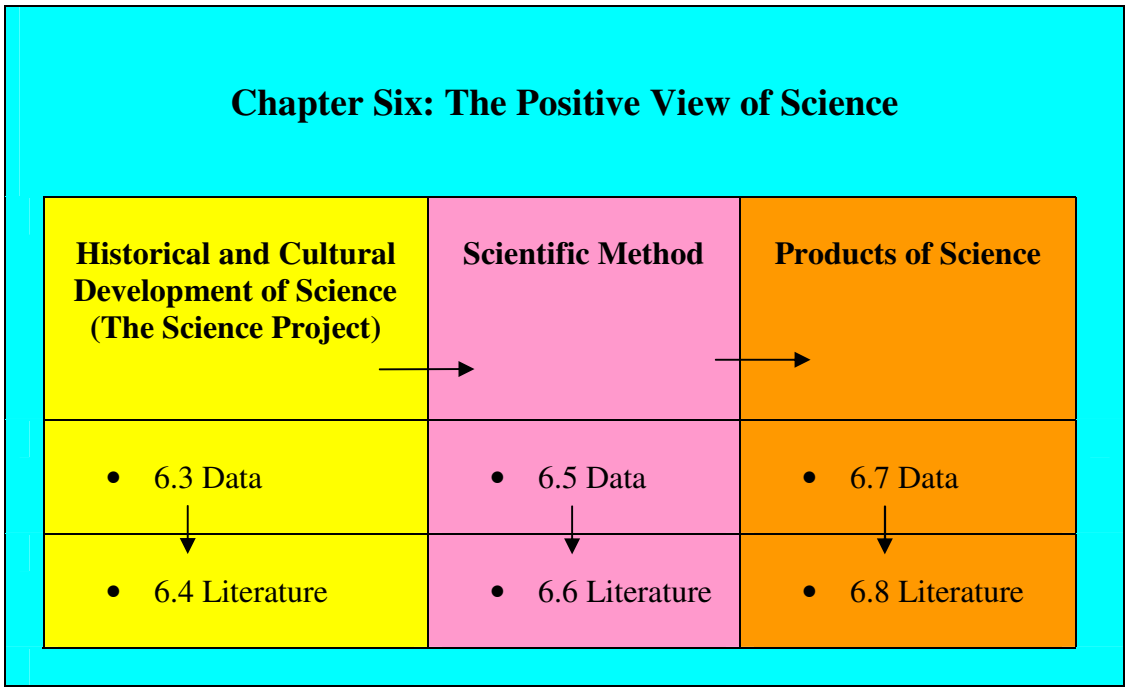
A cursory glance through a newspaper, a glimpse of a television news broadcast, or an excerpt from a radio program will most likely reveal a reference to some aspect of science, reflecting the pervasiveness of science in our everyday lives. Scientific terms and concepts such as 'climate change' are part of everyday language; scientific discoveries continue to transform our lives; scientific principles and products are applied from the workplace to our home and leisure pursuits. We can now download music from a computer, which was originally a tool of production for selected people, to devices of ever-decreasing size and choose to listen to it at the time and place of our choice. Sport, whether at the personal fitness, amateur or professional level, relies upon science. For example, running shoes are increasingly specialised and incorporate the associated specialty features; the fastest swimmers in the world wear full body costumes to give them an 'edge' when world records are at stake; athletes benefit from research into the effects of temperature on metabolism; sporting equipment is stronger but lighter. It is normal and appropriate to engage with science in these ways, and it is unlikely that we would want to escape entirely from our society that has clearly benefited from science.

This chapter addresses this positive view of Science and is organised around three sub-categories:

a. The historical and cultural development of Science (through the Science Project)
b. The Scientific Method, and
c. The Products of Science.

I have firstly presented examples of the data followed by an overview of the literature illustrative of each of the sub-categories, and the organisation of the chapter is depicted in Figure 6.1.

Figure 6.1 Diagrammatic representation of the organisation of Chapter Six



6.3 Data illustrative of the dominance of the Science Project

The goals of the Science Project, in particular that life should be better through the order, control, efficiency and effectiveness of science, were evident in the data. Without a doubt, scientific advances enable children to survive rare and debilitating syndromes, and to enjoy longer, healthier lives even if they have a chronic disease. Nurses on the Children's Ward appreciated that the care they provided to the children and their own work lives were enhanced by science.

6.3.1 Science is valued; it will lead to a better life and improved patient care

The dominant societal belief that Science is valued and improves our lives and hence the care of patients in hospital, was evident within the context in which this research project was undertaken; and, data collected during the study pertaining to the local and broader context supported the premise that a primary goal of Science is to improve life (United Nations Educational Scientific and Cultural Organisation, 2003). An outpatient chemotherapy service was provided within the Children's Ward for children after their initial treatment protocol was established at the State's only specialty children's hospital in Brisbane. Two Clinical Nurses from the Children's Ward had undertaken a series of annual action-based research projects related to the provision of this paediatric outpatient chemotherapy service. The following comment by one of those nurses demonstrates her belief that locally-focused research can contribute to a better life for the patients and the parents.

> N And the parents, you know and the kids. We've made it better for them to what I think we first started. You know we lead them through it. *(Interview "D", 24-05-2005, lines 156-158)*

During the same interview, this nurse repeated her belief that practice based on the best research will lead to improved health care, but she also expressed the opinion that the best research requires a lot of data and that collaboration with other centres both in Australia and internationally will produce the necessary scientific data. Hence, whilst seemingly confirming this positive aspect of science, there were underlying reservations, in that research involves considerable work and that it should be led by the larger institutions, with the involvement of smaller hospitals

restricted to the collection of data and modification of their practices according to the outcomes of the research, such as clinical trials of chemotherapy protocols.

> N And there's actually all new protocols coming out because, um, Brisbane has joined the children's oncology group which is the hospitals in the States, Europe, New Zealand and it's research isn't it, it's best practice….That's about that. So we're going to have to get a lot more data to Brisbane about our admissions, um, you know when they come in sick
> R Uh hmm
> N And there's going to be, not, not different, different drugs but um the same drugs but used in different ways.
> R Right
> N So we're not sure at the beginning how the kids are going to react to it so they're going to do I think a bit more I think in Brisbane initially just to see how they come on. And that's all come from research hasn't it? [laugh]. (*Interview "D", 24-05-2005, lines331-335 and 345-358*)

I observed, on several occasions, this nurse demonstrate through her actions her belief that the children's lives would be better as a result of this research.

The chemotherapy service operated in tandem with the state's specialty children's hospital and there was frequent consultation between the facilities as to which research was implemented, and under what circumstances. The management of children with all diagnoses other than cancer was at the discretion of the doctors and nurses at the local facility; they decided which research was implemented, and under what circumstances. Gastroenteritis was one of the most common reasons for a child's admission to the Children's Ward, yet individual doctors and nurses had expressed different opinions as to how to treat it, including some laypersons' remedies. Nurses were aware of research that indicated that intravenous rehydration was not necessarily the best course of treatment. During one interview, in the context of a discussion about what might be the research priorities at the local level, a nurse suggested the management of gastroenteritis, as in the following excerpt.

N Gastro. That's very controversial at the moment, um. Whether for hydration, there's a lot of research that says um nasogastric resuscitation is just as good as intravenous and in fact in some case better because you don't have the invasive nature, the painful nature of sticking needles into kids. (*Interview "H", 02-05-2005, lines 336-341*).

In fact, the research for this course of action is quite dated, and was identified as one of the medical advances in a series published in the *British Medical Journal (BMJ)*, which is discussed later in this chapter (6.4.1). Comments from another nurse indicated that she was also aware of the research, but hinted that others may not have been and offered alternative reasons for the treatments ordered by doctors, as in the following excerpt when she responded to my question about practices that were changing according to research.

N Whether you're putting a drip in or whether you're putting a nasogastric down, why would you do one or the other
R Mmm
N You know. Some people prefer drips, some people prefer nasogastric but you know, someone said, I think someone complained once because the doctor hadn't put a drip in
R Right
N And had requested a nasogastric. "Oh he's just being lazy." But some of the research is that oral rehydration is actually better than having an IV. (*Interview "L", 23-05-2005, lines 146-148*)

The different opinions about treatment could be a reflection of the fact that the care for children admitted with gastroenteritis is commenced in the Emergency Department, and children who required hospital admission would be quite unwell; doctors in the Emergency Department most likely tend to be cautious and patients admitted to hospital through this department would have a cannula inserted as a matter of course in case their conditions worsened. Alternatively, it could be reflective of the explosion in the amount of scientific literature and the difficulty that busy clinicians encounter in trying to remain abreast of knowledge emanating from

research or the different roles that organisational and individual factors play in the uptake of research findings, as discussed in Chapter Two (2.6.1) (see, for example, Charles, 2000; Edwards et al., 2002; French, 2002; McCleary & Brown, 2003; Nagy et al., 2001).

The Children's Ward had undertaken two small projects funded through a state-wide quality improvement initiative. Both these projects were designed as research; submissions to the Ethics Committee were approved. The value of undertaking projects of interest to the local level was obvious, and the goal of Science leading to better lives was evident, as per the following.

> N We've had two particular types of research activities which were funded in the unit which will make a huge impact on the way in which we deliver services in the paediatric unit but also supporting families um, with chronically ill children. I think they are huge in. If you had somebody who was interested enough to write them up they could quite easily present those at conferences across Australia. (*Interview "C", 21-09-2004, lines 214-221*)

This excerpt also suggests that local research can influence a broader audience, if it is properly disseminated. In part, it also suggests that this smaller regional hospital feels a need to gain recognition for its efforts, a conclusion shaped by comments I heard as part of my Nurse Manager role. For example, during a meeting of the state-wide Nursing Research and Evidence-Based Practice Sub-Committee, a senior nurse researcher stated her belief that no nursing research was undertaken north of the capital city area.

As part of the celebrations for International Nurses' Day each year since 2003, the Nurse Manager-Research has compiled a booklet that includes a summary of all

nursing research projects completed by the nurses in the health district. This booklet is distributed at the Research Forum held on that day, copies are available for all wards and nurses, and additional copies are distributed to nurses when they attend the health service district's two-day District Orientation. In 2006, the booklet was disseminated for the first time through a newly-created Nursing Research Intranet page; potentially all staff of the state's public health system can read about the nursing research completed in the district in which this critical ethnography was conducted.

Some of the action-based research projects conducted by nurses on the Children's Ward involved reviewing available, published evidence, with a goal of introducing changes to somewhat ritualistic practices. For example, feeding equipment such as bottles and teats had previously been sanitised in Milton solution, and it was through the requirement that nurses undertake research projects that this outdated practice was replaced with a more effective process. Whilst there was an overall lack of awareness about the detail of the research that other nurses either had completed or were undertaking in the Children's Ward, there was a high recognition of the change in practice that occurred as a result of that particular project. This belief, that practice changes arising from research are positive, is seen in the following excerpts from two different interviews; and it was also evident on my visits to the ward.

> N [Nurse's name], that was a long time ago, that was sterilising, yep, yep, that took us out of Milton and into the steam which is good. (*Interview "L", 23-05-2005, lines, 358-360*)

> N When I first started I thought how do we know all this you know, like and they said [nurse's name] did all the research into this you know and this is why we don't use Milton and why we steam and you know, and it's all there now and I thought well every day we do that. Why do we do it?

> Because research shows that Milton was no good you know. (*Interview "S", 07-07-2005, lines 533-540*)

Individual nurses on the Children's Ward recognised the difficulties posed by their nursing colleagues' varying degrees of appreciation of research, and the potential conflict that could arise if some were reluctant to adopt research findings. Yet, these nurses tried to remain optimistic that their colleagues would change practice once research evidence was provided, and expressed their hope as in the following excerpt.

> N But hopefully they will change [practice] with the correct information being given to them. (*Interview "I", 04-05-2005, lines 885-887*)

A considerable amount of literature concludes that nursing practice is often not based on research and, despite the mandate of evidence-based practice, ritualistic practices in nursing remain and are difficult to change due to the complexity of nursing care (Zeitz & McCutcheon, 2005). Comments such as the one above indicate a lack of understanding of the multiple factors that effect the implementation of research findings into practice, as discussed earlier in the literature review, specifically sections 2.3 and 2.4 (see, for example, Harvey et al., 2002; Kitson et al., 1998; McCormack et al., 2002; Thompson et al., 2001). The nurses, who I perceived as 'optimists', did not necessarily have research training, although some had been involved in funded nursing research projects. There was recognition that research is likely much more difficult for those nurses who had not undertaken at least one relevant tertiary-level subject, as expressed in the following from a nurse who, almost without exception, was observed to be enthusiastic.

> N Like we're used to it, we went through uni and we did research and you saw the changes that had happened. (*Interview "S", 07-07-2005, lines 144-146*)

Those nurses who had not studied research or undertaken research projects were still exposed to the benefits of science to patient care. For example, the coloured brochures about a wound care product used on several burns dressings during the course of this study, were replete with descriptions, graphs and pictures to describe the product's scientific properties. Nurses who read this information would have also read the product's claim that it was "designed to reduce pain associated with dressing changes"; possibly an attempt by the company to appeal to the caring nature of nurses whilst promoting the scientific benefits of its product.

There were numerous other examples that illustrated that science was valued by the staff on the Children's Ward. The medical system in the society in which we live relies on medications of increasing sophistication to treat diseases. Many medications such as strong antibiotics need to be given intravenously, with their doses titrated to blood levels of the active ingredient of the product. During an observation session in the Children's Ward, I attended an in-service delivered by the pharmacist about one such antibiotic and the associated blood tests. The nurses asked numerous questions about the blood tests, specifically about the amount of blood to be taken and recording the time the blood was taken on the burette. The pharmacist stressed the importance of the accuracy of times, by saying, "A five minute difference means a 3 per cent error rate in dosage" (*as said by pharmacist, recorded in field notes,15-09-2004*). Yet sometimes doctors decided to go against this information. For example, the day following the in-service, the treating doctor said that the drug levels would not need to be done, and the same dosage of the antibiotic was to be given for the next four days (*field notes, 16-09-2004)*. Thus,

although science was believed to lead to improved patient care, there were occasions when scientific information was not strictly incorporated into practice and other factors influenced the decision-making processes.

The crucial role that science, including nursing research, plays in the future health of our population, and the obligation to ensure that the community's faith in the Children's Ward was upheld, was articulated by several nurses. In the course of a discussion about the ward in general, and then about nursing research in particular, one nurse expressed her belief that there should be lots of nursing research conducted on the ward because paediatrics is important, "sort of at the frontline", and people donate considerable money to the ward (*field notes, 02-01-2005*).

Nurses articulated the view that scientific research played a part in their routine practice of caring for children; the health department recognised science's value by holding an annual scientific research conference. The *Fifth Annual Health and Medical Research Conference of Queensland*, held in November 2005, "enabled the State's leading health scientists, inventors, researchers and clinicians to gather…over two days to discuss ways to turn medical discoveries into better treatment and health care for Queenslanders." The focus for the 2005 conference "was on translating the innovation and research of the State's medical scientists to practical use". (*This information was distributed by the Director General via the Intranet within the '100 Days Report' after the Health Systems Review.*)

The display of scientific literature in the office area of the Children's Ward for all staff to read helped to reinforce the value of science and that Children's Ward was part of a much larger whole. Each month, the Acting Clinical Nurse Consultant selected articles about a syndrome of relevance and a research paper pertaining to care of children. An article provided by a surgeon for display, *Taming a strange Australian, and horrific African, disease* (Bunting, 2004), helped to explain the diagnosis of a child who had been cared for in the Children's Ward during the fieldwork phase of this study.

More detail about practices based on research, such as preoperative fasting times and storage of expressed breast milk, was included in a revised version of the *Children's Ward Orientation Manual* in May, 2005. Additionally, twelve lines about nursing research, commencing with: "Research is an integral part of improving nursing care and patient outcomes", urged nurses to find out about projects being undertaken in the ward, and drew the readers' attention to the new parent-held medical record that was developed through a funded nursing research project. During my study, nurses suggested topics for literature reviews that could directly inform best care for the children (*field notes, 02-01-2005*). Nurse clinicians indicated that they valued a direct link between science and practice.

Nurses demonstrated the value they placed upon science by not being deterred by some barriers frequently encountered in relation to research involvement. It was a widely held belief at this hospital that it is very difficult to obtain approval from the

ethics committee for nursing research projects. However, despite this barrier, individual nurses persisted with their research endeavours.

> N I loved it, I've grown, I've majored the art of ethics applications [laugh], um, [nurse's name] and I, [nurse's name is] the level 2, she and I were actually given days, training days to do it. (*Interview "I", 04-05-2005, lines 240-242*)

Individual nurses expressed their interest in conducting research.

> N I enjoy research because I think I've got an enquiring mind. (*Interview "H", 02-05-2005, line 706*)

Notwithstanding this general inquisitiveness, by 2006 it became obvious that this nurse had begun to set limits as to how much personal time she would devote to research. Lack of time for research and lack of support from colleagues are recognised barriers to nursing research documented in the literature, particularly in relation to research utilisation (see, for example, Adamsen, Larsen, Bjerregaard, & Madsen, 2003a; Sellick et al., 1996; Smirnoff, Ramirez, Kooplimae, Gibney, & McEvoy, 2007; Valizadeh & Zamanzadeh, 2003). The nurses on the Children's Ward attempted to work within such constaints, perhaps a reflection of the value they placed upon science; perhaps in a similar way to the research-active nurses in a Danish study (Adamsen et al., 2003a) who were more likely to overcome barriers to research utilisation.

6.3.2 Science helps to bring order and control

Empirical science's purposes of prediction, order and control were evident in the data collected during this critical ethnography. The examples ranged from those applicable across the state's health system, those specific to the hospital, and those

from the Children's Ward. As explained in the Findings Chapter (5.2), the Children's Ward is one tiny part of the state's health system. On 18 November, 2005, the Director-General of Health circulated via a 'Special Broadcast' e-mail across the health system an article, *Leadership and clinically managed networks*, that had been included as an Appendix to the *Report of the Queensland Health Systems Review* (the *Forster Review*) and which contained several statements illustrating the prevalence of the discourse of Science. The assumption that care can be systematic, orderly and predictable was reflected by the author of this paper (Ward, 2005), who claimed that higher hospital mortality is in part related to not using standardised care processes. Recommendation 9.8 from the Review of Queensland Health Systems stated, "Evidence based clinical pathways targeting high volume services (where standardisation will improve safety and quality) should be developed (or purchased) and implemented by clinical networks with the support of the Patient Safety and Clinical Improvement Service" (Queensland Health, 2005b, pxxxvii). Subsequently, the Department of Health invested considerable resources to establish a Centre that would create clinical networks, aimed to increase the input of clinicians into decision-making, and drive the development of 'tools' to assist with streamlining and standardising care; multidisciplinary clinical management pathways are one such tool that warrant further explanation.

Clinical management pathways provide order to the patients' trajectories through their hospital stay, so that the care provided is efficient and effective; the concept was developed from a systems approach used in industry. A clinical management pathway "is a single plan of care that clearly defines the expected progress of a

patient throughout the hospital system from pre-admission and discharge into the community" (Clinical Documentation and Standards Unit, 2007, p4). They can be used to instruct and educate staff and patients as to the care to be provided and the sequencing of that care, thereby assisting in managing expectations, a feature of customer service and quality. No specific clinical management pathway is designed to account for every possible aspect of the patient's care; they are designed to simply "state the minimum standard of care to be delivered to the *average* patient" (Clinical Documentation and Standards Unit, 2007, p4, emphasis in original). If a patient is 'on a pathway', then the care is documented on that suite of forms, as are any individual patient variations away from the plan. This type of documentation should help to reduce the repetition of documentation that is often so prevalent in patients' notes, whilst increasing the likelihood that the documentation contains the essential information. Ideally, pathways are developed for diagnoses that are high volume, high risk, or high cost, and they are more easily developed for surgical diagnoses because the nature of the associated care is more predictable. The hospital has had a Clinical Management Pathways Department for many years; the innovative work that the Department produced was known to staff in other public and private hospitals in the state in the late 1990s. The Clinical Management Pathways Department co-ordinated the development of multi-disciplinary evidence-based pathways, analysed variances from the standardised plans of care, undertook audits on the uptake of pathways and distributed that audit data to the applicable areas.

The Children's Ward had clinical management pathways for only a few surgical procedures during the course of this study, such as those for children undergoing

tonsillectomy, appendicectomy, reimplantation of ureters, orchidopexy, or surgery for hypospadias. For those children who were admitted to the ward with other diagnoses, a different suite of documents was used on which to document their care and progress. Nurses on the Children's Ward told me that they would like more pathways developed and that they preferred them to the basic care plans. Student nurses on clinical placement in the Children's Ward during the study were encouraged to read the pathways to increase their knowledge about paediatric nursing, and they found it useful to have an ordered plan of care, such as that provided in a clinical management pathway, clinical guideline, or even a parent information leaflet (*field notes, 12-11-2004).*

The documentation of care in general is largely premised on a commitment to order and control; and the medication charts, standardised across the state's health system, are a clear example of applying a scientific approach in practice. Medication orders need to be clear, accurate and legible. Medications are administered at certain times, with medications checked, counted and signed. There are also places and processes to document if medications are not given for any reason, or if additional medication is prescribed. During the study, new state-wide intravenous fluids order forms were introduced, based upon the success of the state-wide medication charts in reducing the occurrence of certain 'medication errors'. Also during the study, a 'nursing documentation framework' was introduced across the health service district and all nurses on the Children's Ward attended the associated mandatory education sessions about the correct ways to document care. Although many of the forms used to document the care of the children were different to those used in the adults' wards,

the principles of the documentation framework applied across the hospital. Inadequate documentation of care disrupts the sense of order, increases the likelihood of mistakes occurring, the charts prove less useful when investigating customer complaints about care, and valuable time and energy are invested in endeavouring to discover what has or has not been done.

When the documentation framework was introduced, the Clinical Management Pathways Department increased its scope to include the oversight of documentation; around this time it also took over the responsibility for co-ordinating the development and review of clinical (primarily nursing) policies and procedures. These additional foci were reflected in a name change to the Clinical Documentation and Standards Unit and the appointment of an additional Clinical Nurse whose role was specifically to focus on documentation and clinical procedures. Each ward was still expected to conduct monthly documentation audits; the Clinical Documentation and Standards Unit developed a system for collating the individual audit results and providing progressive reports on the compliance with the requirements of the documentation framework. The standard of documentation in the charts is regularly discussed by the Nursing Executive, another way that the ability of science to bring order and control is manifested and endorsed at senior management level.

On many occasions I noted that the nurses conducted quite a comprehensive assessment of the children at the time of their admission to the ward. The form used for documenting such an assessment was logically structured, with prompts for the nurses to undertake a body-systems approach to this assessment, and was more

comprehensive than that used in the adult wards, yet several nurses suggested that it could be further improved. Toward the end of this critical ethnography, the Nurse Unit Manager was investigating alternative options for patient history and care plan documents, to improve the information elicited and the documentation recorded. Around the same time, a project was commenced to develop a new form applicable across the adult wards, that it was hoped would help to provide a logical link between clinical assessment of a patient and the subsequent plan of care.

Identified deficits in the standard and processes of documentation had contributed to the impetus to establish the working party on Children's Ward to investigate a preferred model of care. The working party approached its goals by adopting an approach that mirrored the logical nature of Science; and the Nurse Unit Manager expressed her view that there were fundamental principles that could direct them in their selection of the most appropriate model for their ward (*transcript, working party meeting number two, 04-11-2005*). No-one questioned the credibility of these principles; they accepted their scientific value. The members assumed that they would be able to acquire relevant research literature and that the adoption of an ordered, scientific approach to the deliberations would result in greater satisfaction of parents and nurses (*field notes, 12-01-2006*). Research literature was sourced when developing a questionnaire, which was later circulated to ascertain the experiences and expectations of the ward's nurses in relation to different models of care delivery. At the meeting when the questionnaire was being devised there were comments that there was a 'truth' to be discovered and that the questionnaire would be able to elicit that truth (*notes made at working party meeting number four, 10-03-2006*). The

report of the results of that questionnaire was written in a format similar to that for any scientific report; this format was logical, ordered and familiar to the members of the working party and was not questioned by them.

At the wider level of nursing services, there are systems for determining the numbers and skill mix of nurses required on each shift, based on the premise that such factors can be predicted. Whereas traditional patient dependency systems are built upon retrospective estimations of the amount of nursing care delivered, the hospital uses a supply and demand model for nurse staffing, which allocates 'hours per patient day' according to the number of patients and the anticipated acuity of those patients. Each ward is responsible for deciding actual nursing rosters, taking into account the times and days that were routinely the busiest. As alluded to in Chapter Five (5.2), these ratios were contested at times; especially to justify keeping some staff on the ward 'just in case' there were admissions throughout the shift. The nurses attempted to use this 'scientific' staffing estimation for their ends, but the Resource Coordinators used the data to allocate nurses across the hospital; the 'bigger picture' of the nursing services usually prevailed.

I also interpreted the use of workload measures to direct the secondment of nurses to assist with the staffing of other hospital wards as a reflection of aspects of the organisational culture of the nursing services. Through such actions, Nursing Administration placed greater emphasis on nurses 'doing' over 'reflecting', as discussed by Scott-Findlay and Golden-Biddle (2005), despite the espoused value placed upon reflection and research in the nursing strategic plans. Nurses accepted

that patients in other areas needed and deserved nursing care, although they preferred to provide nursing care on the ward of their choosing, in this case the Children's Ward. Being asked to assist on another ward meant that the Children's Ward nurses could not use any 'excess' nursing hours for reflecting on their nursing practice or seeking research that could better inform their practice. In Habermasian terms, the scientific system for managing nurse staffing across the hospital, had colonized the lifeworld of the nurses. This emphasis on busyness while at work means that if nurses are to keep up to date with research, then they are expected to do this in their own time (Scott-Findlay & Golden-Biddle, 2005). Nursing services is using Science to provide order to the staffing and to have some control of the patients progressing through the hospital in a timely manner; by doing this, however, opportunities for other nurses to engage with science and research as part of their routine work are reduced.

6.3.3 Science contributes to efficiency and effectiveness

A major driver of the establishment and promotion of scientific evidence-based practice has been the claim that it leads to care that is both more efficient and effective (see, for example, Parahoo & McCaughan, 2001, p21). In fact *Efficiency and effectiveness* was the title of the book written by the British doctor Archie Cochrane, who founded the evidence-based medicine movement; and these concepts were the impetus behind the development of the Cochrane Collaboration (Kitson, 2004). Some mention of the Cochrane Collaboration has been made in the literature review (2.6) and it is referred to again later in this chapter. Nurses drew upon both local research, and research findings presented by large companies, with respect to

Science's goals of efficiency and effectiveness. For example, prior to the commencement of this study, funding had been acquired for a project to investigate aspects of short-stay admissions to the Children's Ward. One of the nurses referred to the findings in this way:

> N "Now up to 400 clients a year, now that's a lot of money and a lot of resource utilisation in the unit." (*Interview "C", 21-09-2004, lines 235-237*)

Even though the research results had not been widely circulated, this nurse understood that research can save money. On my first visit to the ward, this same nurse had returned from an in-service session delivered by a company representative about intravenous fluid replacement, with the aim to locate the particular study on the company's website, because of its claim that sodium chloride would be just as effective as albumin. The nurse commented that cost savings would be "potentially huge" if a change was made, based upon this evidence (*field notes, 09-08-2004).* Some nurses, by virtue of their experience in different roles, were attuned to the costs required to provide health services, other nurses were less likely to have been so aware of the bigger picture of funding of health services, but all nurses knew that there were pressures to reduce costs. At times during the study the catering costs to the Children's Ward were considerably over-budget. All meals provided to the ward were costed automatically to its cost centre code and the ward paid for any inaccurate orders. Meal requests for the children were required to be updated by certain cut-off times each shift; the orders were updated on the computer, and submitted directly to the catering services. Sometimes the pressing need to update the diets took precedence over, say, assisting a nursing colleague with a procedure. It was much less efficient for nurses to telephone Catering for additional meals after the cut-off

times, no doubt a factor at times when nurses asked Emergency Department to delay an admission until after a meal service.

As so often happens in a busy workplace, time always seemed to be in short supply. One nurse thought that research might exist pertaining to some routine activities that could save some valuable time, as expressed in the following transcript excerpt.

> N We've been taught that way and we have you know people watching us and so you keep doing it the same way but you know, I was just thinking, it's not easier as such but if there's research to show that you don't need to do everything that you're doing
> R Mmm
> N You know time consuming, we need time, we never have enough of it in our day. So if we don't have to do it and we're still getting the same outcome and we're not putting anyone at risk. (*Interview "S", 07-07-2005, lines 109-118*)

Ten-hour night shifts were introduced during the study, following a positively-evaluated initial trial. One consequence of this modification to the rostering system would be the need for a different handover process, because nurses would be commencing shifts at staggered times. Audio-taped handovers began, following the claim made by the newly-appointed Nurse Unit Manager in her first ward meeting in November 2004, that they were 'very effective'. Handovers changed overnight; a small audio-tape recorder was found on the ward; nurses used this technology to improve efficiency. Although the Nurse Unit Manager stated in that meeting that it was the effectiveness of the taped format that was the driving force behind the suggestion, in fact the decision was based on efficiency. Existing handovers had been judged to be too long, and the Nurse Unit Manager later confided to me that the main reason for her directing this change had been expediency even though she personally did not like using a voice-recorder. Although other nurses were also

reticent, they refined their audio-taping technique and rarely failed to employ taped handovers from that time, some claiming that they had always wanted to use them or they had used them elsewhere and had found them to be efficient. The nurses readily participated in this change, possibly wanting to create a favourable impression with the new Nurse Unit Manager. Whilst the introduction of taped handovers reduced the time required, there were some other consequences such as the potential loss of the opportunity to share information with colleagues or use the time in an educational way. According to information disseminated at a 'handover conference' attended by some nursing colleagues from other parts of the hospital, the use of taped handovers should have led to an improvement in the comprehensiveness of written documentation. Whether the written documentation improved is not certain; my hunch is that any improvements were not directly related to the handover process.

Nurses applied science to improve efficiency and effectiveness of care in other ways. For example, nurses faced a dilemma as to how they could use technology to adapt to changed intravenous orders and minimise the risk of introducing infection into the intravenous lines whilst at the same time saving money and resources. When they had to change between two different intravenous fluids based on the child's hourly blood glucose levels, the nurses decided to use a double 'Gemini' intravenous pump so that they could leave both lines set up (*field notes, 19-01-2005*). This action also minimised the disturbance to the child that would ensue if the lines had needed to be changed hourly throughout the night.

Similarly, nurses adapted work schedules so that they could adhere to the scientific principles underlying the maintenance of the 'vaccine cold chain' (*field notes, 07-12-2004)*. The nurses were aware that this was especially important because there had been a break in the cold chain in another health facility, which had necessitated the tracing and revaccinating of previous recipients of a potentially ineffective product. Data pertaining to notifiable diseases and the vaccination rates was disseminated by the Public Health Unit. Hence, nurses were aware of the wider picture and whether or not the vaccination rates for the health service district reached the identified targets, nurses routinely checked the immunisation status of all children admitted to the ward, and nurses opportunistically administered vaccinations to the children to keep their schedule up-to-date as appropriate.

Perhaps one of the best acknowledgements that the aims of Science include efficiency and effectiveness is contained in the following excerpt from an interview with one of the nurses, after I asked her about possible topics of research of relevance to Children's Ward.

> N How we can we better treat pneumonia so that, seizure activity that's a… How do you diagnose it? How is it best treated? What interventions are better used? (*Interview "H", 02-02-2005, lines 280-283*)

The nurse used vocabulary associated with efficiency and effectiveness, possibly without consciously realising it. This is just one example of how the benefits of Science, and the associated language, are part of our everyday lives and infiltrate our professional discourse.

Somewhat removed from the Children's Ward, data pertaining to the diagnoses and lengths of stay of patients is routinely collected by Clinical Information Services. This type of data is used at the health system level to determine budget allocations and methods of cost reimbursements to the health districts; at the ward level the Nurse Unit Manager used this 'casemix' data, to assist with strategic planning. Individual ward nurses probably had different degrees of awareness of the uses of such data, although I believe they were aware of connections between financial and clinical management decisions. Sometimes, discussions referring to this 'casemix' data by nurses at ward meetings reinforced and legitimated a scientific approach to the running of the hospital. Once again, the ability of Science to underpin an efficient and effective health system is widely accepted.

6.3.4 The authoritative nature of Science

The authoritative nature of Science was frequently assumed and used in the ward to inform and, in some ways, control behaviour of staff and visitors. For example, the signs about the need to wash hands when entering and before leaving the ward to reduce the risk of the spread of infection, were predicated on the fact that people are rational and will comply with such directions without the need for explanation or coercion, particularly if they believe that there is a scientific basis to these demands.

Individuals and specialty teams were the custodians of specific scientific knowledge, and this could directly influence the perceptions of the quality of care provided. For example, pain management immediately postoperatively or during certain procedures conducted on the ward, such as 'burns baths' for those children who were admitted

with burns, was generally ordered by the Acute Pain Service, part of the Anaesthetics Department. These baths are not pleasant at the best of times, and even less so if the pain is poorly controlled. With respect to burns baths, I noted comments made by the nurses that the Acute Pain Service had seemed to stop routinely attending these baths; there were occasions during the study when an anaesthetist from the Acute Pain Service was not present at such baths and the child's pain was subsequently not managed as well as the nurses thought it could and should have been. The pre-existing routine was reinstated, and this was supportive of the nursing management of the child's care. Nurses, who were experienced in caring for children undergoing burns baths, conveyed to me their clinical knowledge of the different ways they ascertained the adequacy of an individual child's pain relief by demonstrating the somewhat quirky but cute behaviour of one child who would kiss constantly when his pain relief was adequate. A comment was made that a current clinical management pathway for burns would ensure that things would not be missed, such as arranging in advance for the Acute Pain Service to be present for the burns bath *(field notes, 21-09-2004)*. During the course of this study, the nurses were asked to be actively involved in the structured review process of the outdated burns pathway, which includes the critique of current evidence, thus reinforcing the authoritative nature of Science.

Whilst pain relief associated with burns baths was primarily the responsibility of the Acute Pain Service, responsibility for managing postoperative pain was a little more contested. I noted an occasion when the surgical Registrar wanted to reduce the rate of a morphine infusion a toddler was receiving the day following major surgery, but

the Acute Pain Service had said to leave it as they had prescribed. The Registered Nurse agreed with the authority of the 'Pain Team', saying it was "early days yet" *(field notes, 28-10-2004)*. I understood this to convey that the nurse was confident in the specialised scientific knowledge which was the remit of the Acute Pain Service, and that the Acute Pain Service used the 'best' science.

Health professionals acquire knowledge important to their practice from drug clinical trials funded by pharmaceutical companies, although they need to manage the seemingly constantly-changing nature of that knowledge and products. One particular Clinical Nurse, who had a specific interest in and was very knowledgeable about pharmacology, often shared her expertise with her nursing colleagues. For example, at one shift handover she advised colleagues of the potentially extremely toxic nature of the particular combination of antibiotics prescribed for the treatment of a tuberculosis infection, and advised them to acquaint themselves with the information about the early warning signs that would alert them to toxicity *(field notes, 16-09-2004)*. I suspect that it became more difficult for the nurse to share her specialised knowledge with nursing colleagues in this detailed and educative way when audio-taped handovers were introduced. The nurses who had worked in the ward for some time were well aware of the Clinical Nurse's considerable knowledge of pharmacology; these nurses continued to use her as a resource person because they saw her as a credible authority and it was sometimes problematic for them to acquire the most current pharmacology information, which was provided electronically. This particular Clinical Nurse had an uncanny knack of pulling together snippets of scientific knowledge in new ways to suit the particular circumstance, and was not

reticent to share her knowledge about pharmacology nor to question doctors if she thought that there were potential problems with, say, drug interactions, as I witnessed on other visits to the ward. On one such occasion, the nurse's expert knowledge was greater than that of the specialist doctor, who thanked her for alerting the medical team to a potential problem. Both doctors and nurses thus demonstrated their appreciation of the authoritative nature of science as conveyed by this nurse.

Science establishes the normal ranges for temperature, blood pressure, pulse and respiration rates for children of different ages. This information, which differs considerably from the normal parameters for adults, was provided to the Children's Ward nurses in the revised orientation manual, was more readily available through inclusion on some of the medical record forms, but was not routinely explained to nurses deployed to Children's Ward for a single shift. Some nurses from the Children's Ward had the information printed on a small laminated card that they attached to their identification staff badge that they were required to wear at all times.

I noted in my journals several occasions when nurses sought from medical officers 'scientific' accounts of diseases, rare syndromes, or reasons as to why a child had died. This information increased the nurses' knowledge, which helped them understand the disease processes, and they seemed to 'store it away' should they need to draw upon it in the future.

The authoritative nature of scientific research findings were used to effect change. Two Clinical Nurses who, in mid-2004 prior to the commencement of this critical

ethnography, completed a formal nursing research project study into the satisfaction of parents of children receiving chemotherapy as outpatients of the Paediatric Oncology Service, availed themselves of the authoritative status of their research findings and recommendations to mediate the provision of car parking close to the building for the use of these parents, in the same car parking area provided to adult oncology patients *(field notes, 15-11-2004)*. There is a serious shortage of car parking at the hospital and it is unlikely that they would have been able to negotiate this change without the support of the research findings, which had been noted by the Director of Medical Services in his capacity as Chair of the health service's ethics committee.

6.4 The literature illustrative of the development of the dominance of Science through the Science Project

As indicated in Figure 6.1, this section of the chapter presents an overview of the literature about the historical and cultural development of the positive view of Science. This macro-social perspective will help to contextualise the micro-social data collected during the study as presented in the preceding section of this chapter. Literature pertaining to the Scientific Method and the Products of Science will be presented in sections 6.6 and 6.8, following the presentation of the associated data. Because of the dominance of Science in our culture, the literature is copious and I have once again endeavoured to minimise duplication; necessarily, I have focused upon drawing the links between science and health care. It is anticipated that the overview of the literature will clearly show the interdependent relationships between

the larger societal picture of science and health care, with a particular emphasis on nursing.

Science has acquired its revered status over time. Prior to the era of modernity, beliefs had been largely based on religion, superstition or ignorance. During the Enlightenment period, which commenced around the mid-eighteenth century in Europe, "causality and prediction were elevated to the status of truth, and ideologies based on other approaches were questioned" (Grbich, 2004, p3). The dominant discourses during modernity were those of optimism, reason and progress. "It became accepted that universal understanding of the world was to be found in objectivity and rationalism based on principles of reductionism and scientism" (Grbich, 2004, p8).

6.4.1 Science is valued because it makes our world a better place

Although the term Scientific Revolution has been reified, and historians might dispute in what sense there has been a revolution, prior to the Enlightenment 'natural philosophy' existed in place of science as we now know it, and the world was described and explained through "a series of technically developed disciplinary traditions" (Henry, 2002, p4). Mathematics grew in importance because of its ability to help us to understand the natural world, observation and experience were the means by which truth could be discovered, and there was an acceptance that "knowledge of nature should be useful for the amelioration of human life" (Henry,

2002, p13). These features of the Scientific Revolution would be incorporated in the Scientific Method, as discussed a little later in section 6.6.

From around the time of the Enlightenment, man has undertaken great expeditions in order to know more about the world and has endeavoured to conquer the natural world. Charles Darwin's expeditions and writings about evolution challenged pre-existing conceptions about creation. Joseph Banks, who accompanied Captain James Cook on his sea voyages, catalogued new plant species and took specimens from around the world back to England. These and similar explorations benefited from the mathematical sciences and related experimentation that led to greater understandings of, for example, the concept of longitude. Greater knowledge and a desire to expand our horizons even further, contributed to more recent applications of science to space exploration. So much of what we today regard as elementary and take for granted, developed out of man's desire to understand the world in a scientific way. Developments from the Enlightenment period have been refined and improved since that time; for example, the eight-digit calculator, developed by Pascal, was the forerunner to computer technology that can assist us today to achieve "optimal health for all" (Jadad & Enkin, 2007, ps8). The body was likened to a machine, and this led to the biomedical model which still dominates health care and has "led to an emphasis on the technical related aspects of the nursing role" (Winch, Henderson, & Creedy, 2006, p93).

It was considered important that acquired scientific knowledge could be extended to the natural and social worlds (Grbich, 2004, p3). This supposedly value-neutral

"knowledge derived from the empirical or natural sciences [could] be applied to society to increase human progress and happiness, whilst knowledge from the human sciences [could] be used to transform society into a scientific, rational culture" (Winch et al., 2006, p89). Empirico-analytical science, with its purpose of prediction and control, produces knowledge that falls within the realm of Habermas' technical knowledge-constitutive interest (Kim & Holter, 1995, p209; Mingers, 1992, p2). With particular reference to the place of science in relation to nursing, the original curriculum of the Nightingale School at St Thomas' Hospital in London included chemistry, physiology and hygiene courses. More than eight decades ago, Goodrich (1925, p826) contended that the health of the community would be most effectively improved by the public health nurse applying the findings of science in the community.

Knowledge acquired through science becomes more influential once it is disseminated, contributing to a vast increase in the amount of scientific information available through various media. Technical information can and has become part of the mainstream knowledge, and the non-scientist can easily acquire scientific information through, for example, general magazines, the Internet, newspapers and radio programs. Indeed, Brown (1993) describes how scientists initially use a story-telling style to explain their discoveries and new scientific knowledge, but then revert to the technical language of science once the knowledge becomes institutionalised. The importance of science in our society is also reflected in the thousands of scientific journals that contain peer-reviewed articles, and the less-scholarly scientific magazines that are readily available to non-scientists. A recent search of a

university library's database yielded 579 journals with 'science' in their titles, representing an extremely diverse range of disciplinary and interest areas, as though the inclusion of the word 'science' adds a significant degree of credibility to these diverse publications. An important aspect of the dominance of science within our culture is that it is specialised knowledge that not everyone is capable of producing, yet we depend upon it and cannot do without it (Brown, 1993). Undoubtedly, this helps to preserve the status of science within our education system, which restricts the number of students allowed to enrol in tertiary science courses; however, these quotas are filled, despite it being more expensive to undertake science courses in our tertiary system.

Programs of empirical research have indeed resulted in significant medical milestones. Early in 2007, the *British Medical Journal (BMJ)* asked readers to vote on the most significant medical advance over the preceding 166 years. The options were considerably different, and included diagnostic and therapeutic advances, preventative measures, theories, technology, basic scientific as well as epidemiological discoveries, and even the evidence-based approach to medical science (Kaplan, 2007). The knowledge acquired through these scientific advances has certainly: improved the lives of millions of people; given greater choice to individuals, such as in the case of the oral contraceptive; reduced mortality through vaccines, antibiotics and research into risks of smoking; reduced human suffering subsequent to the development of chlorpromazine, anaesthesia, and improved sanitation through clean water supply and effective sewage disposal; and, with reference to antibiotics, has even transformed "illness into a strictly technical

problem" (Bud, 2007). Reading this collection of papers, one could be convinced that scientists continue to support the ideals of the Enlightenment. For example, one of the contributors suggested that vaccines, which were pioneered by Pasteur in 1885, continue to have the greatest potential "to save lives and prevent suffering" (Worboys, 2007, s19). Attendees at a recent Graduation Ceremony of a university's Faculty of Medicine, Health and Molecular Sciences, were reminded that the science underpinning such knowledge was usually, though not always, slowly built up over time, when, during the Occasional Address by a former Federal Minister of Health it was said that science is mostly "slow, hard, unglamorous slog" (Wooldridge, 2007). Although scientists may or may not be aware of the potential future application of their basic science to medicine (Watts, 2007), graduates at that ceremony were told that there was "a scientific underpinning of every degree award…[and that science provides the]…capacity to improve human potential" (Wooldridge, 2007).

Dickersin, Straus and Bero (2007) claim that perhaps the scientific advances identified in the *British Medical Journal* series would not have been translated into medical milestones without the application of the principles of evidence-based medicine. Due to the recognised benefits to the health care organisation in terms of efficiency and effectiveness of care, the principles of evidence-based medicine have been applied to nursing, healthcare and management (refer to 6.3.3). For example, evidence-based practice may result "in practice changes that allow significant cost savings, or alternatively justify necessary additional expenditure. This is attractive to organisations frequently struggling to meet assigned budgetary limits, or lobbying government for additional funds" (Courtney, 2005, p5). It is attractive to

management because the implementation of evidence-based practices should either lesson the risk of litigation, or assist the organisation to defend the standard of care should they be challenged (Courtney, 2005). An understanding of evidence-based practice can be a way for nurses to manage new technologies and the explosion in the amount of information available to them (Kessenich, Guyatt, & DiCenso, 1997, p29). A more extensive discussion of nurses' attitudes toward research, and strategies for implementing research findings into practice, was included in the literature review of Chapter Two.

6.4.2 Science helps us to predict, and provides order and control to our world

One goal of the Enlightenment period was the use of science to enable man to predict what would happen in the social world to bring order and control to that world, as discussed earlier in this chapter, particularly in relation to clinical management pathways (6.3.2). Writing about nursing, research and the evidence, Mulhall expresses this sentiment by saying that "scientists believe that the social world, just like the physical world, is orderly and rational, and thus it is possible to determine universal laws which can predict outcome" (1998, p5). The development of the behavioural sciences perhaps reflects this desire to understand more about humans, and to be able to predict behaviour under certain conditions. As Festinger said in a retrospective review about social psychology, from about the 1940s laboratory experiments were devised about "powerful social situations that made big differences" (1980, p239).

This ability of 'science' to lead to order and control has been expanded to other arenas. For example, whilst quality management within manufacturing industries grew out of the discipline of engineering, there is now a science of quality within the service industries (Beilharz & Chapman, 1994). Customer service and satisfaction is now measured by 'scientific' constructs such as timeliness, reliability and accuracy; these constructs have been developed from the corresponding measures within manufacturing such as precise design specifications, critical path analysis, and quality function deployment (Evans & Lindsay, 1996). In an earlier part of this chapter (6.3.2), I included information about clinical management pathways, a strategy to provide order to the patients' progress through their hospitalisation. Pathways also serve the goal of managing expectations of patients, and thus are a tool to control the quality of the care and service provided.

6.4.3 Efficiency and effectiveness

The health system struggles to achieve the best outcomes for the most people through judicious use of the resources available. Thus considerations of efficiency and effectiveness are embodied in the quality mantra of the health care accreditation bodies, 'doing the right things right'. Much of evidence-based practice, in whatever field including management (Young, 2002), is concerned with efficiency and effectiveness.

Evidence-based medicine, especially as it was originally introduced by the British doctor Archie Cochrane after whom The Cochrane Collaboration is named, adopted

the dominant discourse of Science, with the development of knowledge through systematic experimentation, an emphasis on quantitative research designs, and the requisite skills of critical appraisal of the retrieved literature together with "sophisticated techniques to synthesize information" (Jennings & Loan, 2001, p122). This dominant conception of evidence-based health care is reinforced by the placement of systematic reviews of randomised clinical trials at the top of the hierarchy of evidence (Dobrow, Goel, & Upshur, 2004). Some nurse researchers continue to contend that nurses should not shy away from using "well-designed controlled clinical trials to test the validity of nursing interventions or nursing practices whenever possible…[because these designs]…are the principal means of ensuring that such interventions are useful, cost effective and safe" (Webster & Osborne, 2005, p40). In an oration at the University of Adelaide by the Executive Director of the Joanna Briggs Centre for Evidence-Based Health Care, Pearson (2000) supported this emphasis, claiming that because evidence-based practice is principally concerned with effectiveness it is inappropriate to base nursing interventions on anything other than the best quantitative evidence available. Others claim that changes to practice or policy should not be made on the basis of isolated research; rather, changes should only proceed if the evidence is more widely generalisable, and this will be achieved by researchers who employ a positivist methodology (Battistutta & McDowell, 2005, p51).

Although the analysis of completed systematic reviews may be a useful strategy for prioritising nursing research, there is no guarantee that adequate evidence from a series of well-designed trials to meet the needs of either practitioners or those

conducting systematic reviews of a given topic will be available (Averis & Pearson, 2003). The 'Joanna Briggs Institute', under the guidance of Alan Pearson, has been instrumental in:

a. Leading and contributing to debate on what constitutes credible and legitimate evidence for nursing practice
b. Developing approaches whereby qualitative evidence can be incorporated into systematic reviews (Pearson, 2004); and
c. Making available to nurses the results of such systematic reviews, principally through the Institute's website and publications.

The local health service became a full member of the Joanna Briggs Institute during the course of this critical ethnography. Hence, this information was potentially available to all nurses on the Children's Ward, although the details required to access the site were not well known or publicised (discussed further in 6.7.1). Whilst the definitions of evidence-based nursing, the focus of evidence-based nursing, and the type of evidence hierarchies vary, Jennings and Loan (2001) claim that there are numerous examples of nurses embracing evidence-based practice because of either its potential in providing the best health care from the limited resources available, or as a strategy to improve nursing practice and hence improve outcomes for patients. An electronic journal, *Evidence-Based Nursing*, is produced by the *British Medical Journal*, and has the general aim to present structured abstracts of selected research articles and reviews to enable nurses' knowledge about advances in their profession to remain current in the world of burgeoning information sources. This journal was also potentially available to the nurses in this study through the ward's Internet

subscription; however, it is believed that the nurses on the Children's Ward were largely unaware of the existence of this resource.

6.4.4 Science is accorded authority

Authority and prestige are accorded to science more than to "any other body of knowledge" (Jacobs, 1991, p9). For example, products we use every day have been scientifically-tested to meet stringent guidelines; foods are prepared according to strict scientifically established standards so as not to cause disease; and should we fall ill there are medications, developed scientifically in laboratories, to treat us. In fact, it has been claimed that "if opinions in science clash with opinions outside, in most quarters those of science carry the day" (Jacobs, 1991, p9). It is difficult to envisage a world without science, and science's authority is encapsulated in newspaper articles with headings such as *Saving our lives* and *Science the saviour, says Frazer* and text such as "we do really good science in Australia" (Davies, 2007a), and "science is the key to a better economic future and world leaders should invest more in research, according to Professor Ian Frazer" (Davies, 2007b). Politicians commission extensive and expensive scientific reports to support their policies; law enforcers pronounce that science will be used to prevent, investigate and solve crimes, including terrorism. Authoritative and international bodies host world conferences on science, such as *Science for the Twenty-first Century, A New Commitment*, held in Budapest in 1999 under the auspices of the United Nations Educational, Scientific and Cultural Organization, which led to a *Declaration on Science and the Use of Scientific Knowledge* (2003).

Billions of dollars are available for scientific research by way of grants or projects sponsored by large corporations and governments. For example, the total amount of research expenditure by Australia's 'peak body for supporting health and medical research', the National Health and Medical Research Council (NHMRC), increased steadily from $178.9 million in 2000-2001 to $495.9 million in 2006-2007, which represents almost eight per cent of the total Australian Government science and innovation funding (National Health and Medical Research Council, 2007b). Forty-nine percent of the NHMRC's research expenditure in 2007 was in 'Basic Science' with another thirty per cent being expended on research classified as 'Clinical Medicine'. Almost three-quarters of the research expenditure in 2007 was allocated to the university sector, almost all the remainder was allocated to research institutes, with only one percent of the expenditure awarded to the hospital sector (National Health and Medical Research Council, 2007b, p11).

Publications, such as those titled *Great Minds in Australian Research* (National Health and Medical Research Council, 2007a), reinforce the authority accorded to science and scientists within our community. The media and scientists work together to enable non-scientists to grasp an understanding of science through, for example, radio programs such as *Ockham's Razor* and *The Science Show*, presented by the Australian Broadcasting Commission, television shows such as *Sleek Geeks* which aims "to reveal the surprising science that lies hidden in our homes, offices and backyards" (Australian Broadcasting Commission, 2008), newspaper articles such as those referred to above (Davies, 2007a, 2007b), and popular texts such as *Great*

Mythconceptions (Kruszelnicki, 2004) and *Q & A with Dr K: Why is it so?* (Kruszelnicki, 2001).

This section (6.4) of the chapter has discussed the background as presented in the literature to the dominance of the discourse of Science within our culture. I now return to the study data in support of the Scientific Method.

6.5 Data illustrative of the dominance of the Scientific Method

As will be described later in section 6.6 of this chapter, the general understanding of the Scientific Method is that it is incremental, logical, planned, largely reliant on quantitative data, and requires resources. These attributes were all evident within either the observational, interview or material data collected in this study.

6.5.1 Appreciation of the Scientific Method in practice

Nurses expressed sentiments similar to those expressed in this excerpt.

> N There is a process to research that is logical - you know, start with your aim, ….what you did, outcomes. (*Interview "L", 23-05-2005, lines 85-86*).

Having previously attended a short education session delivered on the ward about ethics and nursing research by the Nurse Manager–Research, another nurse's comments reflected her appreciation that the Scientific Method works in practice.

> N It's not that hard. I don't know what they're going on about. (*Interview "S", 07-07-2005, lines 355-356*).

Both these ward nurses had studied introductory research during their undergraduate degrees, and claimed to have a beginning understanding of the traditional scientific method; this is consistent with my work role, in which I most frequently encounter nurses who support traditional positivistic research methods, qualitative research methodologies being quite foreign to them. I frequently hear nurses from across the health district tell me that action research is not 'real research', a belief apparent in the Children's Ward. A Clinical Nurse gave a copy of a qualitative research report that she had submitted for publication to a nursing colleague to read, which would help the nurse better appreciate how and why the Outpatient Paediatric Oncology Service operated as it did.

> N And I said "Here, have a read" and um, the person read it and said "Ah, but that's not proper research is it?" (*Interview "H", 02-05-2005, lines 633-635*)

This response confirmed that the other nurse held a perspective about research more closely aligned with the experimental approach of science. Several nurses alluded to the incremental nature of science and research, and recognised that one project often leads onto another.

> N The, the first one I think I just did was a literature review but research, my next research came out of that, um, as in the change of practices introducing, which hasn't been introduced yet [both laugh] um breast feeding competency for the staff um, when they come to the ward. (*Interview "L", 23-05-2005, lines 310-315*)

One of the nurses involved with the project that developed a parent-held record book, articulated that, although research takes a long time, there was value in expanding the target recipients.

> N We're now in the final, one of the final phases of that [laugh]. In my spare time… [and later in the same interview]

> This one needs to be extended as in, um, more kids with syndromes, um, being made available to them and their families and I can see the benefit in that. (*Interview "I", 04-05-2005, lines 45-47 and 670-672*)

There was an understanding that one piece of research rarely warrants a change in practice; it is important that research evidence builds up over time.

> N So I'd probably just ask [name of Nurse Unit Manager], "Oh do you know that, I read that, we don't do it, or you know, we're doing the opposite to what we should be doing". But that's one article as well. (*Interview "L", 23-05-2005, lines 475-479*)

Nurses were aware that there was a hierarchy of scientific journals, although they did not consistently refer to them in practice. On one occasion, doctors suggested to a nurse who had conducted some research related to another hospital service that the results of that study should be published in the *New England Journal of Medicine*, because this was "the top" (*field notes, 09-08-2004*).

From my work role I understood that some nurses' hesitation to become involved with research, despite their stated appreciation of its value, was associated with the terminology; even the word *research* could deter nurses. This matter was raised soon after this study commenced, although I had expected that it would have been expressed more often, based upon the frequency such comments are made to me during my work role.

> N Research. I guess research comes with connotations but I, you see I see the word research and I look at it and go, it's a word. (*Interview "C", 21-09-2004, lines 795-797*)

Another nurse said that although research takes time, it is not necessarily as difficult as it could be, perhaps in reference to a negative reputation associated with the mandatory requirement to undertake action-based research.

> N They don't really know that it's you know, it is a bit of work but it's not really as difficult as you think it is. (*Interview "L", 23-05-2005, lines 114-115*)

Comments made that undertaking research was the realm of academics, or clever people, are likely to be reflective of the authoritative nature of science in our culture, and the emphasis placed upon science throughout education systems. It is also reflective of the different cultures of nurse clinicians and nurse academics: academics are expected to undertake research and to publish that research, which nurse clinicians are then expected to incorporate into their practice (Mulhall, 2002).

> N Research, that it's some great formal process, um, and yes there is a formality to it, but you have to be some sort of professor to do research. Only really brainy people do research, only universities and academics do research. And that's a mindset you have to overcome. (*Interview "H", 02-05-2005, lines 1099-1104*)

Another nurse expressed a similar comment during a discussion about the level of interest in research within the nurses on the Children's Ward.

> N I think they're just not interested in research. I think people look at research and think "Oh you've got to be an academic … to do, to do research." And I mean, that was what I certainly still think…. [sigh]. (*Interview "D", 24-05-2005, lines 727-732*)

Whilst some nurses thought that it is possible to overcome this perception, and that nurse clinicians could acquire the skills necessary to undertake some research, the idea that science is the responsibility of experts was expressed frequently. Also, the credibility of the experts conducting research may well have influenced the nurses'

willingness to adopt research findings into their practice. This specialisation is one of the key requirements for a discourse to become institutionalised, or dominant, within our society (Brown, 1993). The specialised training and skills of scientists to conduct research and then to assess the relative merit of contributions to scientific knowledge is, according to Brown, one condition "for a discourse to become hegemonic" (1993, p155).

6.5.2 Accuracy, statistics and generalisability of results

Within the data there were many references to statistics and the predictive aspects of the Scientific Method. There was recognition of a cause and effect relationship in science (*Interview "H", 02-05-2005, line 1076*). Nurses reinforced the traditional understandings of the Scientific Method when they commented that 'real' research samples need to be large, and questioned whether they had enough participants to undertake well-designed research; although one nurse recognised that the choice of a topic "close to the heart" might be of more relevance (*Interview "D", 24-05-2005, line 622*).

There were differing understandings of statistics. Doctors talked of the likelihood of cure being between 30 per cent and 80 per cent for a child with a brain tumour; nurses thought this range was too large to be meaningful to them clinically (*field notes, 25-11-2004*). Nurses did understand that statistics could be used to influence decisions about the provision of health services as in the following, with respect to some research undertaken associated with the zonal helicopter retrieval services.

N … Triage…the evidence was there in the face … And they saw that, and they couldn't argue with it, that's where the research mainly came from. (*Interview "C", 21-09-2004, line 564-567*)

The predictive nature of science and the need for measurement were inherent in the proposal to establish clinically-managed networks in Queensland Health as a consequence of the Systems Review. Ward (2005) advocated that interventions (programs) would need to be based on evidence and that the outcome measurements would need to be statistically 'robust', reflecting a scientific approach to the proposed networks. Again, this is predicated on the assumption that patient care can be measured in such ways, to enable statistical analysis; only those processes that are known to lead to improvements in outcomes for patients would be selected as targets for care. That is, the targets would be reproducing the evidence.

Although nurses asserted their belief that research played a part in their daily practice, this was primarily in reference to the attribute of the generalisability of scientific research that had been conducted elsewhere.

N A lot of what we do reflects research that's gone on somewhere else but we haven't been involved in it. (*Interview "H", 02-05-2005, lines 58-60*)

Later in the same interview, this nurse was discussing the progress with some research she had been following on the Internet. She communicated her understanding that large-scale science is applicable to the local situation.

N Yes you do need to have these other grand and glorious research projects that look into how teeth gum disease can affect prematurity, but that still has some sort of, um, even though it's a very far-reaching and not, out of the usual everyday practice it still does have some application to practice. (*Interview "H", 02-05-2005, lines 1119-1124*)

Other nurses, who tended to express their opinions more frankly, set provisos on this in that they placed less value on, and were only interested in, research that they perceived as being directly applicable to their daily practice in the Children's Ward. These nurses would most likely have read the article about a rare cause of a leg ulcer, of relevance to a child who had been in the ward, which was provided by one of the surgeons as discussed in 6.3.1 (*field notes, 18-11-2004*).

Some nurses recognised that nursing research conducted locally could be more widely generalisable, as in the case with the parent-held record book. One of the nurses involved in this project took up the position of the Paediatric Outreach Nurse, and in that role could identify many other children who would benefit from the book (*field notes, 16-09-2004*).

6.5.3 Research requires resources

Money, time and researcher expertise are required for scientific endeavours to proceed, and I have previously provided some information about funding of research projects by the National Health and Medical Research Council (see 6.4.4). With respect to the bigger picture, one nurse acknowledged that a lot of money was being spent on the development of new wound care products (*Interview "H", 02-05-2005, lines 63-65).* This could likewise have been said with respect to the money and other resources that pharmaceutical industries invest in the development of medicines and vaccines, and that governments invest in the establishment of Research Institutes.

Employees of the state's public health system were informed in February 2006 through the Director-General's *100 Days Report* following the distribution of the findings of the Forster Review, that $15 million had been set aside for a Research and Innovation Fund to provide seed funding for innovative practice, in recognition that specific funding is required to develop the science within health. The funding was largely targeted toward traditional science as can be seen from the following excerpt from the e-mail.

> We will immediately establish a Smart Health Research Grants Program. This program will have the following attributes:
> - The scheme will provide funding for applications which just missed out on funding under the NHMRC Project Grants Scheme (it would therefore be akin to "near miss" schemes run by a number of organisations);
> - The program will be open to applications submitted from Queensland Health Facilities and/or for Clinical, Health Services, Public Health and Preventive Medicine research submitted by other Queensland Institutions which have a Queensland Health Co-Investigator;
> - The scheme will apply for grants submitted for funding for 2006 and for the next five years;
> - A pool of $1 million will be allocated for this scheme in 2006 with $2 million per annum in subsequent years. (*e-mail communication, 'Special Broadcast', from Director-General, 03-02-2006*)

This is a considerable amount of money and it remains to be seen how many nurses will apply for the funding or become involved in funded projects. In 2004, $100,000 per annum had been allocated to nursing research grants as an election promise by the State Government. A sub-committee of the Peak Nursing Body, as it then existed, was charged with the responsibility of determining processes for: applying for such grants, assessing applications, and overseeing funded projects. In my Nurse Manager work role I was involved in assisting nursing colleagues with the submission of grant applications in 2004 and 2005. The health service district was successful on each occasion, receiving $20,000 funding across two grants in the first

year and $35,000 across another two grants in the second year. One of the successful projects in the second year is investigating an area of clinical practice in the Children's Ward and is ongoing at the time of writing this thesis. This level of success was seen as particularly noteworthy because the remainder of the funding had gone to nurses in health facilities in and around the state's capital city.

However, nurses from the Children's Ward have not always availed themselves of research funding opportunities. For example, at the commencement of the observational phase of this study, I read a notice about funding available from the Royal Children's Hospital (RCH), for regional research project grants of $50,000 for two years,

> …for the support of a proposed scientific investigation with mutual interest to the RCH and HSD [Royal Children's Hospital and Health Service District], the local Health Service and the RCH Foundation. It should benefit the body of knowledge in paediatrics and have direct relevance to the health problems of children and young people. Multidisciplinary applications are strongly encouraged. (*field notes, 18-08-2004*)

This notice was still on the ward's noticeboard despite the date for applications having closed more than two months previously. In 2005, the Nurse Unit Manager of Children's Ward and the Nurse Manager–Research considered applying for a similar grant, commenced preliminary work on the application, but did not complete the application because other workplace demands and a lack of infrastructure required for the planned research would place unnecessary stress on any large project and would lessen the likelihood of its successful completion. From prior experience with ward-based projects, there was the recognition that research often takes more resources than originally envisaged. As one nurse said, "It does take a lot of effort"

(*Interview, "I", 04-05-2005, line 728*). This nurse realised that research consumes time, even when you seem close to the end.

> N We're now in the final, one of the final phases of that [laugh]. In my spare time. (*Interview "I", 04-05-2005, lines 45-47*)

I have already touched upon the need for researchers to have specialised skills and knowledge. The Clinical Nurses, required to undertake an action-based research project annually, had varying levels of research skills. Strategies to develop the requisite skills included:

- The provision of education sessions to individuals and groups on different topics
- Comprehensive librarian support
- Availability of electronic databases and journals, and
- On-line education modules about evidence-based practice.

However, even though some of the more recently-appointed Clinical Nurses have completed tertiary-level research subjects, a need to continually think of ways to build the research capacity within the nursing services remains. This is despite of a rather strongly-held belief of many nurses that research should not be mandatory, as expressed in the following.

> N You can't force people to do research because then you get wishy-washy garbage and bits of research activities that waste people's time and nobody really learns from them. (*Interview "C", 21-09-2004, lines 575-578*)

Many nurses embarked on their action-based research without seemingly giving much thought to the resources that would be required to produce meaningful research, whilst others were hesitant to start.

6.6 The literature illustrative of the development of the dominance of the Scientific Method

As indicated in Figure 6.1, this section of the chapter presents an overview of the literature about the development of the dominance of the Scientific Method. John Stuart Mill, through his emphasis on sense experience and, principally, inductive logic to prove scientific theories, was instrumental in the development of the experimental approach (Halfpenny, 2001, p372; Jacobs, 1991, p3; Weiss, 1995, p21). The experimental approach was developed further by the logical positivists, members of the 'Vienna Circle', who anticipated that universal enlightenment would follow from the extension of the natural sciences to the social and philosophical arenas. To achieve this, scientific knowledge needed to be separated from opinion, superstition and metaphysics, and this would be achieved "by refining earlier empiricist accounts of science and merging them with new ideas from logic and mathematics" (Halfpenny, 2001, p372). Later, in recognition that it is not possible to inductively prove the truth of universal statements, Popper developed his falsification theory of science (Jacobs, 1991, p11). The hypothetico-deductive scientific method develops knowledge, with the aim of progressing toward the "truth by a process of conjecture and refutation" (Kegley, 1995, p45). Science progresses, according to Popper, if new theories convey more information about the world than did the pre-existing theories

that had been falsified (Jacobs, 1991, p22). Popper "thought that the mark of science, as opposed to pseudo-science, was its openness to refutation and revision, its willingness to abandon hypotheses in the face of disconfirming evidence" (Halfpenny, 2001, p375). According to Popper (1960/1985, p171), the growth of scientific knowledge reflects growth of knowledge in general. Popper maintained that, although observation is theory-laded, his falsification method would "factor out the messiness of culture" (Aronowitz, 1998b, p19).

In the nineteenth century, Florence Nightingale advocated the use of scientific methods to systematically collect, analyse and use data to improve health and nursing care. She recognised the power of objectivity and logical argument, and used such an approach in place of religion and superstition when appealing to politicians to support her causes (McDonald, 2001; Winch et al., 2006). She was convinced that God's design of the world is knowable in mathematical-statistical terms, and she used statistical diagrams innovatively and to great effect.

North American nurse researchers have strongly promoted and supported this positivistic scientific approach to the generation of nursing knowledge; nurses from other countries have followed this lead (Holmes, 1996). Contributors to a recent Australian text have claimed that the quantitative experimental design is of most practical use to nurses because the objectivity and consistency of such designs produce the most credible and generalisable results (Battistutta & McDowell, 2005). Reflecting about nursing research almost fifty years ago, a noted American nurse researcher claimed that "the ultimate aim of research is the ordering of related valid

generalizations into systematized science" (Schlotfeldt, 1960, p493). In a discussion of the paradigms used for nursing research, Weaver and Olson claim that nurse researchers undertook, at least initially, research within the dominant positivist paradigm in order to establish "a scientific research base to increase disciplinary credibility" (2006, p461). Historically, in order for nursing scholarship to develop and survive within academia, nurse scholars adopted the "supreme valuing of 'science' in the Enlightenment sense, as a value-free and unquestionable authority" (Georges, 2003, p45).

By adopting this dominant discourse, nurse scholars participated in the hegemonic processes, because the type of research necessary for tenure, promotion, and funding grants needed to conform to the traditional scientific process. Even as nurses began to submit qualitative research proposals, they needed to defend their work against the criteria for quantitative proposals if they wished to survive and thrive (Georges, 2003), as experienced by nurses in the Children's Ward who had been required to write and submit applications to the health service district's ethics committee. Cheek and Rudge argue the need to "make explicit the power relations and structural oppression implicit in the nursing context" (1994, p58), and assert that nurses who "challenge the tenets of this taken for granted superiority of positivistic scientific discourse…run the risk of, at best, being ignored, or at worst, being labelled irrational or even immoral" (1994, p60). Hence, nurses often participate in the hegemonic processes of the "discourse of positivistic epistemology" (Cheek & Rudge, 1994, p60), although this has not deterred a growing resistance to positivist science, which is particularly strong within the context of Australian nursing research,

theory, education and clinical practice (Holmes, 1996). It should also be remembered that North American nurse theorists have not necessarily adopted a positivist scientific approach to theory generation. Whereas some, such as Orem and Roy, have been heavily influenced by the positivist tradition, nurse theorists such as Leininger, Parse and Watson have developed their theories from other paradigms (Weaver & Olson, 2006, p461).

Three underlying assumptions of contemporary empiricism are predictability, generation of knowledge, and that "the meaning of the individual parts and of the whole are both seen as critical to knowledge development" (Weiss, 1995, p15). "The development of probability based statistical approaches carried quantification a long step forward because it made the regression framework available to social scientists" (Brown, 1993, p158). An understanding of multivariate statistics has enabled the application of empirical approaches to scientific studies outside the confines of a controlled environment. Hence, it has been claimed that contemporary empiricism has moved forward from the need for total control over experimental conditions, as expounded by the logical positivists (Weiss, 1995, p23). Of course, there are numerous situations where research that will eventually contribute to health must be conducted in controlled laboratory conditions, such as the early phases in the development of drugs and vaccines (Jennings & Loan, 2001). And some nurse scientists argue the necessity for nursing research to be conducted upon empirical designs, in order to "produce tangible, concrete knowledge that promotes health, prevents illness, or increases the potential for recovery from illness...[and

that]…mere understanding is not an adequate rationale for nursing research" (Weiss, 1995, pp24-25).

The conduct of science in our society has come to be controlled by the mainstream scientists, and conservative funding providers. The bulk of funding for scientific research is allocated to those researchers who pursue the preferred topics in the traditional 'scientific' way, with perhaps only a token amount of funds being provided to researchers who wish to pursue less favoured topics or undertake research that is not considered mainstream or conformist. In this way, traditional science, whereby knowledge is built up incrementally, with researchers very focused on their particular area of interest with a lack of understanding of the whole, is perpetually reinforced (Aronowitz, 1998a). Aronowitz (1998a) claims that this paradigm is maintained within the tertiary sector where postgraduate science students are given the topic to research, which is likely to be a small component of a much larger project. Notwithstanding the cautionary words of Stehr (2001, p500) of the limits to the power of scientific knowledge that is generated in a laboratory, Aronowitz (1998a) claims that, even in the social sciences, researchers maintain the status quo by adopting similar strategies to investigate topics in such a way as to provide scientific credence to existing or proposed policy directives for government and private organisations (Winch, Creedy, & Chaboyer, 2002, p160). "The notion that accumulated evidence for a particular position/finding renders the information more useful generally relies on the implicit belief of traditional science that 'more is better'" (Fitzgerald & Field, 2005, p69).

This understanding of the Scientific Method is inherent in the definition of science provided in the *Australian Concise Oxford Dictionary* as being "the intellectual and practical activity encompassing the systematic study of the structure and behaviour of the physical and the natural world though observation and experiment" (Moore, 2004, p1269). Another definition of science in the same source refers to discipline-specific scientific knowledge as the "systematic and formulated knowledge, esp. of a specified type or on a specified subject" (Moore, 2004, p1269). The adoption of the Scientific Method by social sciences and, no doubt, by other disciplines, has assisted in their acceptance as being more scientific, along the line of the traditional sciences such as physics and astronomy (Brown, 1993, p158).

6.7 Data illustrative of the dominance of the Products of Science

Just as the products of science are ever-present in our daily lives, they featured in the broader health system and the Children's Ward. The State's health system recognised that demand for health services is fuelled in part by "advances in medicine and new technology" (Queensland Health, 2005b, piii). Walking into the ward, one did not need to look far to see equipment in use, either for play purposes, as means to deliver treatments to children, or used to manage the ward.

6.7.1 Technology in the ward

Computers and computer technology were prominent features of daily life on the Children's Ward, as they are likely to be in most health facilities. Administrative practices were reliant on the computer network: for example, medical records are

requested by logging-on to a particular computer application. General management processes in the ward were considerably disrupted if the computers were 'down' for any reason, including infrequent interruptions in the supply of power to non-essential medical equipment. Even the hospital's internal telephone directory is computer-based, as is the means for paging personnel and the 'buzzer system' for patients to request nursing assistance.

There were several computers in the ward that the nurses could use to retrieve scientific information to assist with patient care; a portion of their time was also consumed by using the computers as a means of communication either through the ordering of stock, updating of dietary requirements of the children, or perusing and composing e-mails. Nurses could use the health service's Intranet to locate documents such as current procedures and guidelines from the hospital or specialist facilities of relevance to them at the time, or they could use the databases to search for more extensive literature pertaining to topics of interest to them. For many, using the computer seemed second-nature, and they expressed their frustration that others could not use it.

> N It's not hard, that, it's literally, you're seconds away from the most up to date research in the world. (*Interview "E", 04-07-2005, lines 1167-1169)*

Another nurse expressed similar convictions, reinforcing that she was comfortable with information technology and that computers are legitimate sources of information.

> N People don't, I don't know, they don't seem to, the computer's just there, it doesn't take long. You go to Google if you can't do anything else, you know what I mean, if you can't get into the library Google is great. (*Interview "S", 07-07-2005, lines 688-691*)

Some nurses preferred to access the Internet from their homes, away from the ward. Sometimes they said that this was because, not being experts, they needed time to find information that interested them.

> N Sometimes useful, um, snippets of information. And that sort of stuff that's come off the Web usually. (*Interview "H", 02-05-2005, lines 711-712)*

A senior nurse who had completed tertiary-level research subjects, and who was able to organise her work schedule to include some library time, identified that she uses technology, a product of Science, to discover more about science.

> N Sitting, reading, and playing on the computer some days isn't that hard if you're in the mood. (*Interview "E", 04-07-2005, lines 929-930*)

The computer was a potentially rich source of credible scientific information, including that obtainable through sites such as the Cochrane Collaboration or Joanna Briggs International. Some nurses told me of their previous experience using the *Joanna Briggs Nursing Procedures Manual* at another hospital. When this study commenced, the hospital did not have full membership of Joanna Briggs International and hence did not have authorised use of the Manual (*as recorded in field notes, 09-11-2004*). However, the hospital became a full member of the Joanna Briggs International during the course of this study, which meant that nurses potentially had access to the 'members only' section that contains, for example, more extensive documentation related to systematic reviews. However, whilst the Joanna Briggs International site was an allowed Internet site accessible by all members of the health service through the Intranet without the need of a password, the password for the 'members only' section is not widely circulated; it is available, however, if one inquires from the librarian. Therefore, in practice it was likely to be easier for

the nurses to access the medicine-focused information from the Cochrane Collaboration site that did not need a password, than the systematic reviews pertaining to nursing available through the Joanna Briggs International site.

Nurses did not necessarily demonstrate an appreciation of the questionable scientific worth of some information published on the Internet, perhaps unaware that much of that material is not peer-reviewed or not having the expertise to assess the merit of scientific publications. To address this knowledge deficit, a couple of nurses attempted to complete the health department's on-line evidence-based practice education modules. As an aside, those who began these modules, however, recognised that knowledge can be powerful and believed that the completion of the modules would assist them to acquire positions outside of the ward, or to apply for promotions within the ward *(see, for example, field notes, 09-02-2005*). None of the ward's nurses were known to have attended the evidence-based practice tutorials, conducted by the Chief Librarian, that include discussion about the credibility of the information able to be retrieved from different on-line sources.

Some nurses continued to contend that they were not computer-literate, despite the fact that they used computer technology when providing routine care to the children. For example, digital thermometers, patient-controlled analgesia machines, intravenous pumps, blood glucose machines, pulse oximeters and cameras to photograph the healing of wounds all rely on computer technology; and nurses also had to master computer technology for reasons other than patient care, for example to order ward stock and supplies. One day, the Ward Clerk 'forced' nurses to make

better use of computer technology by dispensing with a ritualistic process of placing stickers containing contact details of discharged patients in a book, the same information being available from the computerised patient information systems. The Ward Clerk wrote a note in the ward's communication book, saying that the pre-existing system was outdated, time consuming and totally unnecessary (*as per field notes, 23-12-2004*). Even though the nurses had used the manual system for many, many years, I did not hear them complain that an administrative officer had arbitrarily changed the system. Nor did the nurses revert to the earlier hard-copy system.

I do not intend to convey that nurses were negative toward technology, quite the contrary. One Enrolled Nurse was undertaking her Bachelor of Nursing, with the intention that she would work in the Operating Theatres, partly because she liked technology (*field notes, 28-09-2004*). Technology, such as portacaths or continuous infusion pumps, made it possible for some children not to have to remain in hospital overnight or for extended periods; they could return to the ward daily or as required for their medication such as antibiotics or chemotherapy to be administered. Data provided from equipment such as patient-controlled analgesia machines or machines that automatically record vital signs was deemed to be reliable and trustworthy.

> N It's easy to use machines, and it's um, it's data that can be written down and it's solid and it's acceptable. (*Interview "H", 02-05-2005, lines 296-297)*

The proliferation of machines used in patient care throughout the hospital, and the recognised need that this expensive equipment needs to be maintained and its distribution managed, subsequently led to the establishment of the new Biomedical

Equipment and Education Service (BEES), operated by nurses, during the time of this study *(field notes, 18-10-2004)*.

On a broader scale, medical imaging departments no longer rely solely on plain X-rays. Whilst the correct weights to be used on traction for a child's fractured leg will be determined by the degree of union of the bones as depicted on a plain X-ray, other children in the ward underwent much more sophisticated medical imaging procedures, such as ultrasounds, nuclear scans or computerised axial tomography scans. Nurses, doctors, allied health professionals and, to a lesser degree, parents expected that this degree of sophisticated technology would be available and did not question the science underlying it. Results from all medical imaging procedures undertaken within the hospital are provided electronically, as are the results of pathology investigations. Science in these respects is present throughout the health system, and the general public has some familiarity with it perhaps because of exposure through the medium of television.

6.7.2 Other products of science, research

There were examples of the use of products from science and research, other than computer technology, within the context of this study. Stethoscopes have become more sophisticated, and many nurses and doctors were observed to wear their personal stethoscopes around their necks, which some people might claim contributed to their authority within the clinical setting. Nurses prided themselves on their familiarity with these products gained through experience of having used them.

> N I have used Acticoat [the name of a specific wound care product used in this case for burns] in Brisbane and we had, they'd done a lot of research in Brisbane about that. *(Interview "R", 27-05-2005, lines 92-94)*

Published research findings are tangible outputs of scientific endeavours. The Nurse Unit Manager produced research literature to support the trial of ten-hour night shifts and the introduction of self-rostering in the ward. This specialised knowledge was used, in a way, as a commodity to give credence to these trials. The fact that some nurses were able to acquire and use knowledge, such as that from research, could give rise to unequal power relationships; those who could not demonstrate this level of mastery were less powerful.

Research conducted by nurses in the Children's Ward led to the publication of parent-held record books that were subsequently available for use by a wider group of children than originally envisaged. The practical value of such a tool was clearly identified when parents had elected not to record crucial information in the book that would have proved useful to have when their child needed treatment at a distant hospital. The nurse who recounted this story was disappointed that the parents had not had the foresight to use the book to its potential (*Interview "I", 04-05-2005*). An information brochure related to another nursing research project that had investigated the use of two different commonly-used analgesic drugs, both available over the counter, was being developed by the pharmacist during the course of this study (*Interview "L", 23-05-2005, lines 335-338*).

The nurses availed themselves of products of science in their everyday lives. For example, many carried their personal mobile phones, of increasing complexity and

decreasing size, with them whilst on duty. The younger nurses in particular did not think this behaviour unusual; nor feel they could or should be parted from their phones, although I was surprised that the nurses carried and used their mobile phones for social reasons rather than as points for emergency contact. This dependency on mobile phones could perhaps be interpreted as an example of Habermas' concept of 'colonization of the lifeworld', whereby the nurses were allowing themselves to be dominated by technology, rather than technology being seen as facilitative.

6.8 The literature illustrative of the development of the dominance of the Products of Science

As indicated in Figure 6.1, this section of the chapter presents an overview of the literature about the development of the positive view of Science's products. Technology, a product of scientific endeavour, provides us with the means to travel to and from work, tools with which to undertake our work, fast and long-distance communication modalities, and options for how to spend our leisure time. Such technology has transformed our work and personal lives, and in many instances it has been liberating, as Engels foreshadowed (Holmes, 1996). We can travel the world in the comfort of our homes through television, which also brings us visions of man's explorations into Space. The science required to put man on the moon has contributed to everyday products such as Teflon, and has driven continued advances and refinement in computer technology and software. Not a day goes by without our using products of Science, and industry invests heavily in research and development

to produce products ‘we cannot do without’, as the nurses who could not be parted from their personal mobile phones while working on the ward would confirm.

Nurses have publicly promoted the importance of science for a considerable time. For example, in an address to the International Council of Nurses in 1925, Goodrich (p823) echoed John Dewey’s words that the world would be transformed through the power of the practical knowledge gained through science. Goodrich (1925, p822) acknowledged that attendance at the Convention had been made easier because of the products of science and technology, whereby man had overcome forces of nature to develop new and faster means of transport. Nursing education curricula incorporate science, Schools of Nursing provide well-equipped laboratories in which clinical skills are acquired prior to the student nurse undertaking clinical placements, and universities include the selection and use of appropriate tools and technologies as one attribute of their graduates (see, for example, James Cook University, 2004).

Even the simplest inventions can be classed as technology, although in everyday life we may not regard them as so. For example, nurses are more likely to classify machinery such as pulse oximeters and cardiac monitors as technology, as indeed they are, than the ‘tools of trade’ such as thermometers, stethoscopes, bandages, telephones (Sandelowski, 2000b). Sandelowski claims that the use by nurses of thermometers in clinical practice was an entrée into the scientific (masculine) world of Medicine. However, because (female) nurses were only responsible for the measurement of temperature and not the interpretation of the measurements, which was the province of the (male) doctors, the task of recording temperatures was

perceived as less prestigious. The design of thermometers was simple enough for women to use in the home.

Sandelowski (2000b) discussed the role that telephones have in nursing, and the paradox that they enable the nurse to talk directly with another individual, but at a distance. All categories of staff on the Children's Ward used the telephone in this way, often because many of the children came from distant towns and the telephone was a means to make and maintain contact with other health providers or family members of the children.

Tele-medicine was being developed throughout the state and, around the time of this study, the hospital installed additional video-conferencing facilities so that communications could be enhanced. The future of tele-medicine seems boundless. For example, the technology can deliver the virtual expertise of a specialist to a smaller facility so that emergency treatment following a traumatic accident is minimally delayed. Alternatively, in less acute situations, specialists, other health professionals and patients can avail themselves of the video link so that all are able to see at the same time, for example, a wound or X-ray. The video-conferencing technology available throughout the hospital was also used by patients who came from remote towns to see, while talking with, their relatives on special occasions. Computers and robotic attachments will most likely soon play an even larger role in assessment of patients or surgery.

The non-profit Cochrane Collaboration uses technology, principally computers and software, to enable it to provide up-to-date information about effectiveness of care. From the beginning, the Collaboration considered how it could use technology to produce its products and distribute the information around the world. In many countries including Australia, national subscriptions enable anyone with Internet capabilities to access the information free of charge. Therefore, the Cochrane Collaboration is not just for health professionals; consumers can also access the information to answer their questions.

6.9 Chapter summary

Contemporary definitions of science, such as those provided in the *Oxford English Dictionary*, and popular uses of the word science within the media, reinforce the orthodox understandings of science. Our lives depend upon science and its products, and we live in a culture that values science. The development of the dominance of the discourse of Science was explained with reference to the data and literature pertaining to three concepts: the Science Project, the Scientific Method, and the Products of Science.

This chapter has presented data that illustrates the importance of Science to the nurses and the Children's Ward. There was ample 'evidence' that nurses:

- Applied Science's properties of order and control to the sometimes chaotic worlds of the Children' Ward and paediatric nursing
- Incorporated the authority attributed to Science into their work practices

- Supported the authoritative nature of Science through their appeal to science in their work
- Appreciated that Science contributed to the delivery of efficient and effective nursing and health care
- Believed that the use of Science improved the quality of the care provided to the children
- Reflected the value placed upon Science in general by the community
- Respected research that conformed to the traditional Scientific Method, with its emphasis on statistical measurement and generalisability of results
- Recognised that quality research requires the investment of considerable resources
- Utilised the products of Science, in particular technology, in their work and non-work lives.

There are opposing viewpoints, however, and the next chapter presents data and the associated overview of the literature that illustrates some of these counter-arguments to the dominant discourse of Science.

Chapter 7: Interpretation and analysis from a critical theory perspective – counterarguments to the dominance of Science

7.1 Chapter introduction

The dominance of Science within our society, illustrated by examples from the micro-culture of the Children's Ward and the broader literature, was discussed in Chapter Six. Notwithstanding the trust placed in Science, there were examples from the data that illustrate some oppositional viewpoints and counterarguments. Scientific knowledge is a cultural product and, as such, critical theorists consider it appropriate to critique its origins and to consider whose purposes it serves. A similar format to that used in the preceding chapter (see Figure 7.1) has been employed to present data and literature pertaining to alternative arguments to the dominant positivistic view of Science in three sub-categories of:

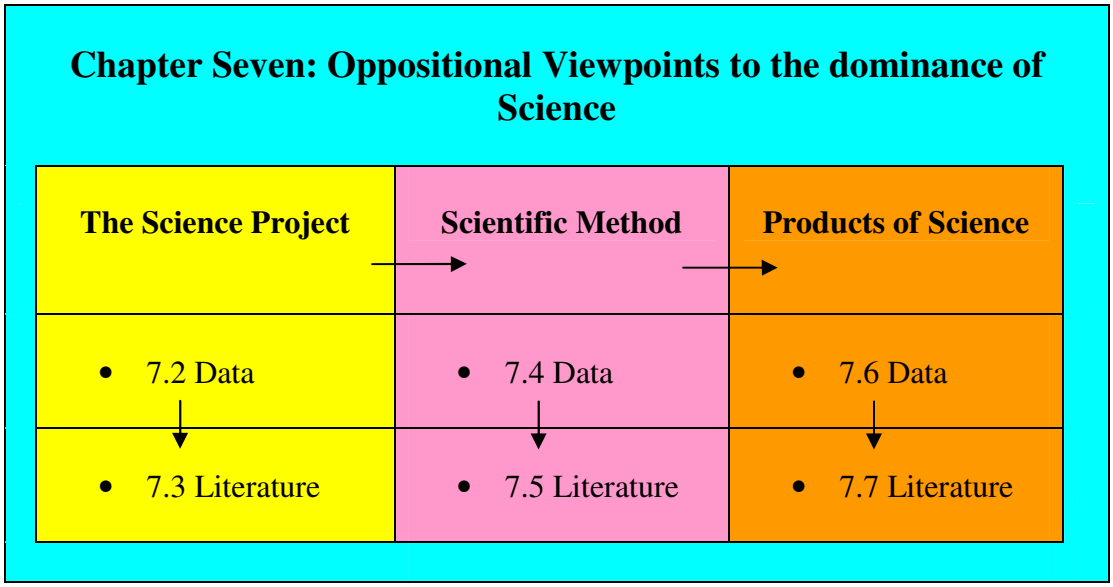
a. The Science Project

b. The Scientific Method, and

c. The Products of Science.

Once again, choice and placement of data and literature are somewhat arbitrary and I do not intend to convey that these are the only examples that could have been selected.

Figure 7.1 Diagrammatic representation of the organisation of Chapter Seven



7.2 Data illustrative of alternative arguments to the goals of Science

Science's goals of improving life, bringing order to the world, increasing efficiency and effectiveness were evident in this study, as described in Chapter Six. However, there were some challenges to this received view of Science, and to the scientisation of nursing in particular.

7.2.1 A good life needs more than Science

The importance of clinical experience over theoretical learning to the development of knowledge was evident in the interactions on the ward and was discussed in the interviews, as per the following extract.

R And you were saying that you've acquired your knowledge mainly through experience
N Yeah. Through some reading, but a lot through experience

R So, [pause]
N Most of the journals that pertain to paediatrics are written either in America, because you know everything comes from America, or England and they don't necessarily reflect our practice here. And they are written usually in very long-winded language that you really use interest
R Yes
N And there's not much of the how to's in it. There's a lot of 'up there' stuff. (*Interview "H", 02-05-2005, lines 252-265*)

Specialty paediatrics experience enabled the nurses to more confidently challenge doctors who usually managed adult patients, as well as use their knowledge and experience of paediatric nursing to reconcile different principles of care. For example, although it is well established that patients need to refrain from eating and drinking prior to anaesthesia, the literature pertaining to the recommended length of fasting times is contentious; in practice, fasting times was a 'hot topic' as discussed briefly in the earlier ethnographic description of the Children's Ward (5.2).

N And so for us we say, "OK, but you're fasting a 2 year old after midnight. You have to put a drip in, you have to get fluids", or you know, "When are they are going to theatre, how long will they be fasting", if they are fasting after midnight. Whereas an adult you might not be so. (*Interview "L", 23-05-2005, lines 529-534*)

I noted in my field journal that the paediatricians, and other doctors who were most often associated with the care of the children on the ward, regularly invited nurses into discussions about the planning of that care. This involvement was especially welcomed from some of the longer-term nursing staff, and when the child's care was complex. Nurses also recognised and appreciated that the doctors assigned credibility to the opinions and expertise of some nurses about specific topics.

N She's dealing with [Doctor's name] a lot in the clinics and that sort of stuff and always talking with him one-on-one, so if [Nurse's name] is bringing something up with him he's probably likely to accept it a bit better or trial it, if he agrees with it, than he would if it was say someone

> just like us from the ward who he doesn't see as much and doesn't work with as much. (*Interview "L", 23-05-2005, lines 238-244*)

Credibility worked both ways, with nurses having opinions about doctors' expertise. I directly observed nurses disagree with doctors, and nurses told me during the fieldwork about occasions when they had felt they had to speak up, which was more likely to be with doctors who did not visit Children's Ward that often, exemplified in a couple of events involving doctors from the Adult Intensive Care Unit. The Clinical Nurse, with years of international paediatric nursing experience, followed protocols and contacted the Intensive Care Unit Registrar after-hours because she had needed to administer a medication intravenously to manage a young child's seizures. The Registrar said the child was not fitting, to which the Clinical Nurse reportedly replied, "Yes he is, his lips are smacking." The Clinical Nurse demonstrated the lip smacking to me, which she knew from experience was a very subtle manifestation of a seizure although it was not necessarily a textbook sign. The Registrar would not believe her or modify any orders, however, and the child remained on the Children's Ward rather than being transferred to the Intensive Care Unit. The Clinical Nurse, who believed that the child needed a higher level of care than the Children's Ward could provide, told me that she had felt like saying, "I know I'm not clever like you, but why won't you listen to me?" (*field notes, 20-09-2004*). On similar occasions, the nurses' compassion and concern for the children and their families were evident, quite often extending after a child's discharge from hospital. I witnessed similar levels of concern by other health professionals associated with Paediatrics on numerous occasions, particularly in relation to complex family situations and dynamics, or continued treatments.

An Enrolled Nurse, who had been involved in a formal research project and was generally very positive about science, recognised its limitation when she could not find the scientific research that underpinned a routine aspect of caring for children with asthma, which she was learning as part of an external paediatric nursing course (*Interview I, 04-05-2005, lines 114-117*). Three possibilities for this situation could be: the information did not exist, practice was ritualistic without scientific basis, or perhaps the course itself was not based solely on evidence.

Some nurses did not value the research efforts of their nursing colleagues, even though that research had improved the hospital experience for the children and their families. Consequently, nurses expressed disappointment in their colleagues' lack of support for their research efforts.

> N So, there's no thought to what you're doing, and there's no acceptance that what you're doing may be of any value. (*Interview "H", 02-05-2005, lines BD, 645-647*)

Other nurses' involvement in nursing research came with strings attached, and they demonstrated their reluctance to value Science *carte blanche*.

> N I think that if there's a need to know basis for, that's going to help the Ward, things like evidence based practice stuff…You know, we need to fix things so you research it, that sort of stuff yeah (*Interview "N", 07-07-2005, lines 346-348 and 350-351*)

This experienced nurse was not afraid to speak against the dominant discourse of Science, and generally reluctant to be involved in research unless she could see its direct relevance to her practice.

7.2.2 Challenges to the claim that Science brings order and control

Even though the nurses sometimes described the ward as 'chaos' or 'controlled chaos', routines were important to the daily functioning of the ward. Different priorities of the various staff groups, or attempts by nurses to deliver personalised care, sometimes meant, however, that the routines were disordered. One such example was the nurses' need to negotiate changes to a doctor's preferred time to view, say, the wounds of a child who was recovering from burns. It most likely suited the doctor to view the wound quite early in the morning, prior to proceeding to the Operating Suite or Outpatient Clinics, but from the nurses' point of view, there was considerable preparatory work to be done before the children were ready for the doctor to inspect their burns. A burns bath required more than one nurse and could take an hour or so, and it did not suit the night nurses' routines to undertake a bath at six in the morning when there were fewer nurses on duty. The morning shift did not commence until seven o'clock, at which time the nurses' highest priorities were to prepare the children who were scheduled for surgery that morning, the majority of who were only admitted to the ward around the same time. Although this early time of day could be quite chaotic, nurses had rarely challenged the surgeon's preference to view burns dressings at this early time until the recently-appointed Nurse Unit Manager directed, at a ward meeting, that everyone needed to identify a mutually-acceptable time to undertake large burns baths, and the nurses would re-organise their workload accordingly. A burns bath for large wounds disrupted the more routine activities of the ward and, as previously indicated, needed staff from other teams to be present. For large burns it might be more acceptable to the nurses to

undertake these at the changeover between the morning and afternoon shifts, when there was 'double-staffing'.

There were other instances of disruptions to order and control. A Clinical Nurse recounted how she clearly told a doctor that she would not remove a dressing early in the morning, certainly not until the doctor had established intravenous access, prescribed strong medication to relieve pain, and adequate time for the analgesia to take effect had elapsed. This was reportedly quite a tussle between the two but the nurse's challenge to the doctor's request was successful on that occasion (*Interview H, 02-05-2005, lines 496-523*).

Research findings contribute to order in practice routines, but new research findings can similarly disrupt that order. The Paediatric Chemotherapy Outpatient Service worked with the State's specialty Children's Hospital and had progressively researched and modified its processes in an endeavour to meet the needs of the children and parents, the team from the Children's Hospital who led and co-ordinated each child's treatments, and the Children's Ward. However, a nurse told me about new chemotherapy protocols being trialled, and she envisaged a disruption to the established ward routines for the benefit of the children.

> N Depends what's wrong with them you know, um, as to what protocol they're going to go on to. So there's going to be no hard and fast um rule I suppose. That it's just, we're just going to have to wait and see I think what's going to happen. Because if it's meaning going into more than one day you know or a different day a week I mean maybe I think we're going have to rethink the whole thing again. (*Interview "D", 24-05-2005, lines 382-387*)

Disruption to and modification of routines was also demonstrated between hospital departments. An older child who complained forcefully that she had to remove her bra and panties before going to the Operating Theatre was given permission to wear them if they were 'pure cotton'. However, in response to my question whether this would then become routine practice, another Children's Ward nurse replied, "No", conveying that they had made an exception to the rules for this individual child (*field notes, 25-11-2004*). I felt that this reflected that some practices would remain ritualistic and that nurses did not feel the need to question the underlying reasons or 'evidence'. If that nurse had investigated further, she may have discovered that the Operating Theatre was updating its policies and from my knowledge would allow pure cotton underclothes to be worn by all patients because there were minimal safety risks in doing so.

Nurses often exercised their clinical judgements and decided to go against the 'routine' orders; sometimes such actions were the manifestations of those nurses' antiscientific attitudes. For example, they would change a wound dressing a day earlier than scheduled, because their clinical experience provided them with rationales for going against the scientific principles of moist wound healing and leaving the dressing intact (*field notes, 17-08-2004*). I noted there were numerous other examples of nurses adapting the orders for wound dressings, such as substituting a saline pack for a 'betadine' pack (*field notes, 01-09-2004*).

Notwithstanding the aim of documents such as clinical management pathways to standardise and streamline care, and the authoritative nature of the research upon

which they were developed (see 6.3.2), the ward's staff did not always use them. For example, occasionally I noted that a nurse might elect not to use a clinical management pathway because it was 'too much trouble' to locate at that particular time. Also, there were ambivalent views expressed about the value of clinical management pathways, and the perceived lack of education that had been given when they were first introduced and on a continuing basis. Those alternative viewpoints are reflected in findings of research undertaken at an Australian paediatric hospital which concluded that, whilst nurses found clinical management pathways to be time-saving and instructive, pathways posed an increased risk for the "inappropriate standardisation of care" (Roberts, Boldy, & Robertson, 2005, p27). Criticisms, or at least the acknowledgement that pathways and evidence-based practice have their limitations, have been discussed previously, but the nurses were pulled between their goal of individualised care and the logical, ordered, scientific aspects of pathways.

Sometimes it was difficult to establish routines, when it seemed that doctors differed in their orders, and I heard nurses express sentiments similar to the following interview excerpt.

> N Every doctor's different aren't they. Like we just had Dr [name] through, that young boy over there and totally different again from [first name of usual doctor], you know like. (*Interview "S", 07-07-2005, lines 887-889*)

Comments such as this recognise that care must be individualised, and that doctors do not always agree that there is only one way to provide treatment.

7.2.3 Efficiency and effectiveness are not the only driving forces for nursing and health care

Whereas clinical management pathways were one means to structure, streamline and standardise the care delivered to patients with similar diagnoses, policies and procedures provided the detail about how a task or process should be performed. Although these procedures were available via the health service's Intranet, not everyone felt that practice should be so prescribed. In the context of a discussion about nurses undertaking procedures differently, one senior nurse on the ward offered the following comment.

> N Yes. Where there is more than one way to skin a cat as long as they follow the guiding principles, ah, I don't have a problem with the way they do it as long as they stick to the principles, then you might have five nurses doing one procedure different. (*Interview "C", 21-09-2004, line 94*)

Another nurse expressed similar sentiments.

> N Could do a burns bath totally different as to how I might do it, but not on the whole, not that different but the end result might still be the same and how do you tell that to someone. You know how do you tell that to somebody that you can do it different ways as such but it ends up, you know the same. (*Interview "D", 24-05-2005, lines 1087-1093*)

This view was held, despite the fact that it would sometimes require considerable effort to explain to the parents why some nurses had different techniques for, say, dressing a wound or debriding burns in a bath. Individual variance in the way a procedure was undertaken was potentially less efficient, yet the actions of many nurses conveyed the belief that Science, in the guise of evidence-based procedures, should not be prescriptive about practice. Whilst it was important to be efficient,

nurses were very aware of their ethical and moral obligations, that efficiency may not have been the most important consideration at a particular point in time.

I observed the nurses demonstrate compassion when caring for the children, but this may have conflicted with 'hard' science. During one of my observation periods, a nurse returned to the Children's Ward after taking a toddler to the Operating Theatre. This child was most likely going to be discharged to the care of a foster family and the nurse was upset because she had wanted to stay longer to cuddle the child, who was clinging to her. If the child's parents had been present, they would have been encouraged to stay with their child until the anaesthetic was underway. The nurse was torn between the need for efficiency in a busy ward and the desire to provide personalised care that the child craved.

Much information that nurses needed to consult during a shift, such as pathology and medical imaging reports, procedures or patients' details, should have been available through the networked computers. But computers 'go down' or the information is not available at the point of use; efficiency was compromised in such circumstances, and nurses' trust in computers was further challenged.

7.2.4 Challenges to the authoritative nature of Science

Whilst nurses generally expressed positive attitudes towards research (science), I became aware of some instances when they were unwilling to accept the authority of Science without question. Earlier in this chapter (7.2.1), I included an interview excerpt in which a nurse expressed her reservations in blindly accepting research

findings from America, partly because those findings might not be generalisable to the local setting. Examples such as that may also reflect differences between the socially-constructed cultures of nursing (academic) research and nursing (clinical) practice (Mulhall, 2002).

The rather disconcerting pace of change associated with Science made it difficult, at times, to ascribe to its authority. How does one keep abreast of important evidence, or keep up with Science? The ever-increasing amount of information available to us adds to the difficulty of deciding what is most correct, comprehensive and relevant.

> N I think that's an ongoing thing because of the rate of change. I don't think everyone's really kept up to that and I don't know what's the, what's the basis for not being kept up to date. (*Interview "H", 02-05-2005, lines 162-164*)

Nurses recognised that perhaps doctors could not always keep abreast of changes emanating from research, and there was seemingly no scientific basis to their orders.

> N Research doesn't make a difference, doctors don't use it – So [breath] in instances like that you feel very disempowered and if you get enough of those knocks you can stop thinking what you should be doing instead. And you get to that stage where it's just the doctor's ordered this and so you use it without actively questioning at the time. (*Interview "H", 02-05-2005, lines 82-87*)

Even credible scientific evidence was not authoritative enough for some nurses to change their practice.

> N But for my practices, like I might read that and say "OK, well this is what they say and that's well and good, but this is what the hospital wants me to do". (*Interview "L", 23-05-2005, lines 504-507*)

The nurse who made this comment after skimming through an article I showed her during the interview, perhaps did not realise that the text referred to a systematic

review about fasting times, and that national guidelines were soon to be released in the United Kingdom based on the findings from that rigorous review process. On many other occasions, the reluctance of some nurses to change some ritualistic practices was a source of frustration to their colleagues. The following interview excerpts relate to this apparent reluctance to change, and in some instances the interviewee has attempted to explain their colleagues' behaviour by claiming that experience does count as a form of evidence. Whilst contemporary definitions of evidence-based practice recognise the importance of clinicians' judgement, such deliberations are not classified as credible in hierarchies of evidence. I interpreted comments such as those in the following excerpt to be other manifestations of unscientific attitudes, whereby years of repetition equated with expertise.

> N There's some that I would think it, yeah this is the way we've always done it, so that's the way we're going to keep doing it
> [and later in the same interview]....
> I think some aren't comfortable because they, like looking from their point of view they've seen that this has worked for years and years and years and that's the way they've always done it and they've never had a problem with it and, and that might be their style of research as they put it, you know.
> R Mmm
> N And technically, they've technically been researching it or experiencing it for the past 20 years whatever, but I suppose that might be their reluctancy to try something new because they know that this way works. (*Interview "R", 27-05-2005, lines 84-86 and 280-291*).

Similarly, a more senior nurse expressed the following.

> N And I mean that was what I certainly still think. [I laugh] Um. [sigh] Is it, would it be too hard for them to change? You know they just want to chog along doing what they understand and nobody challenge them. (*Interview "D", 24-05-2005, lines 731-735*)

Sometimes, nurses had to reconcile two or more opposing scientific principles when delivering care to a child. When administering chemotherapy, nurses need to follow

procedures strictly to ensure the safety of all present, including the recommendation to wear a special face mask. A nurse, conversant with the evidence associated with the administration of chemotherapeutic medications, discussed how she reconciled the need for this precaution with the need to be able to put the child at ease.

> N But I went and I bought myself some goggles, some clear goggles you know. I feel more comfortable and I feel safer because I think I get too hot and sweaty and that was my you know reasoning behind it. Because I feel very claustrophobic behind that you know, like I'm in theatre you know and I couldn't talk to the kids and. They can't see your mouth. (*Interview "S", 07-07-2005, lines 972-979*)

Similarly, with reference to a wound care product for burns that needed to be kept moist, the risk of predisposing the child to hypothermia, another complication of burns, was of concern to nurses.

> N I just think it's an awful lot every hour to keep wetting them with cold water especially over a big area 'cause you keep thinking of hypothermia of extremity, you know but, um it might be worth. (*Interview "D", 24-05-2005, lines 677-680*)

Other nurses challenged the authority of Science by reading 'non-scientific' literature written for laypersons, with titles such as *Heal thy body*, during quiet times on a night shift. Perhaps to be contrary, another nurse mocked her colleagues for believing in such material, yet she herself was not always interested in reading research articles. There were occasions, also, when nurses employed practices that positivistic or 'hard' scientists might describe as lacking a research base. For example, a nurse went to the Maternity Ward for some medicine for a baby's colic and returned instead with a midwife who was adept at infant massage, which "worked a treat" (*field notes, 04-10-2004*).

Another outward sign that nurses sometimes challenged the authority of Science was when they used non-scientific language to describe particular children. For example, by choosing to describe a two-year old as a 'screamer' or an eleven-year old boy as a 'sook', they felt they were communicating clearly (*field notes, 08-11-2004*). There were statements made that there was more to nursing than research, alluding to the care versus cure debate that is prominent in the literature, which is referred to a little further in sections 7.3 and 7.5.

One Registered Nurse claimed that research is a "bad word" and she did not intend to apply for a promotion because that would entail undertaking her own nursing research. She clearly did not want to do this at that point in her career, and relied upon her extensive practical paediatrics nursing experience when caring for the children.

> N Just don't want to, I've had enough. I'm a nurse, I'm not a, you know. It's just something I've never, I can't see the point. (*Interview "N", 07-07-2005, lines 417-419*)

This particular nurse rejected the need for Clinical Nurses to undertake research, although she was a discerning consumer of research to supplement her existing knowledge. There were 'rules' in place in the ward that had a scientific basis, however, as mentioned in the Findings chapter (5.2), these messages were not observed to be reinforced; rules about switching off televisions were more often adhered to than those requesting people to wash their hands.

7.3 Counter-arguments to traditional Science within the literature

As indicated in Figure 7.1, this chapter section presents an overview of literature that critiques the positive view of Science, and includes some alternative viewpoints about theories of Science. Critiques pertaining to the Scientific Method and the Products of Science are located in later sections (7.5 and 7.7) following the presentation of the associated data (sections 7.4 and 7.6). Although the literature about these counter-arguments is not as extensive as that supportive of the traditional positive view of Science, I have still been selective when deciding what to present in each section. Once again, where possible, I have included references to the links between Science, Health Care, and Nursing. Critical theorists, postmodernists, feminists, proponents of evidence-based practice, and qualitative methodologists are amongst those who have proposed challenges to the traditional view of Science.

Around the turn of the twentieth century, the notions that finite answers could be provided through Science and that scientists could discover absolute truths began to be questioned (Grbich, 2004). The different types of scientific knowledge that were being acquired as a result of faster means of communication, books, extensive world travel, and even world conflicts, together with economic changes such as those arising from industrialisation and technology, gave rise to alternative views to the prevailing dominant discourse of Science. Science's ability to predict came into question. For example, Einstein's Law of Relativity and, later, Heisenberg's 'uncertainty principle in quantum mechanics' "challenged the assumption that a world which could be precisely measured and documented, existed independent of

humanity that was just waiting for us to grow sufficiently sophisticated tools to discover it" (Grbich, 2004, p11).

Challenges to the traditional theory of science have built up over time and come from many perspectives. Critical theorists such as Horkheimer and Adorno claimed that science, which since the time of Bacon "has been conceptualised in terms of power over nature" (Kellner, 1989, p89), was developed in order to dominate humans. Members of the Frankfurt School in the 1950s found positivist science to be oppressive because of its "intrinsic interest in technical control…[and, additionally, its] supposed value freedom is a value itself, sinisterly hiding behind a façade of neutrality" (Halfpenny, 2001, p375). Keeping in mind that any discussion of scientific theory is complicated because positivism is not one entity, positivistic science is perceived as conventional, concerned with maintaining the status quo and serving the interests of the scientists and the scientific community. Critical feminists would add, since Science is male-dominated, that it contributes to the ongoing oppression of women (Halfpenny, 2001, p380). Geuss (1981) explains how critical theories differ from scientific theories along the three dimensions of aim, cognitive structure, and epistemology (the kind of evidence they require). To achieve their aims of enlightenment and emancipation, critical theories are reflective; scientific theories are objectifying because they are concerned with manipulation of the external world (Geuss, 1981, p55). Critical theorists accept that scientific theories, in effect positivism, have their place in the natural sciences, but they are opposed to positivism because of its denial that theories can be "both reflective and cognitive" (Geuss, 1981, p2).

Critical theorists also disagree fundamentally with positivists about the nature of progress. Whereas positivists conceive that social problems can be resolved through neutral step-wise scientific enquiry, critical theorists ascribe to the need for radical transformation of social problems (Halfpenny, 2001, p375). Scientific advances have not guaranteed "progressive emancipation, because Science is often deployed as a tool of social control, domination and destruction" (Halfpenny, 2001, p380). Paraphrasing Foucault, "facts and values cannot be separated, knowledge and power are entangled" (Halfpenny, 2001, p381). According to Horkheimer and Adorno, "science, scientific reasons and technology were part and parcel of existing processes of production and social domination, and thus should be mistrusted" (Kellner, 1989, p86). Science itself has become a myth, yet the goals of the Enlightenment period were to move away from religion or myth (Kellner, 1989; Mingers, 1992). Science has assumed a powerful position in our society, being raised to this level of a myth and as such the discourse is rarely challenged. Science is viewed as a "universally important ideal" (Midgely, 1992, p3), and in this discourse it is only the misuse of science with which one needs to be concerned.

Brown contends that there are three conditions for a discourse to become hegemonic: the discourse needs to be specialised, it needs to be useful to dominant groups, and it needs to be institutionalised, and that "in the modern world science is that hegemonic discourse" (1993, p154). Critical theorists have argued that the pursuit of rationality in terms of the Enlightenment ideals is itself a form of domination, with the oppression of alternative theories, methods and topics, and the promotion of new

dogmas (see, for example, Aronowitz, 1998a; Aronowitz, 1998b; Halfpenny, 2001; Holmes, 1996).

Postmodernist critique of the Science Project is partly related to its mistrust of meta-narratives (Lyotard, 1984, in Cheek, 1998, p83). Postmodernist approaches emphasise multiple voices, views and methods, and hence are sceptical of Science's aim for a single truth (Holmes & Warelow, 2002). With respect to our understandings of Health and Health Care, Cheek claims that these have been dominated by the "'truth' of scientific/medical discourse" (1998, p86). Short, Sharman and Speedy explain that postmodernists abandon the Enlightenment ideal that "scientific rationality will provide society with the route to truth and freedom" (1998, p10).

Halfpenny (2001) summarises several critiques of positivistic science that are offered by feminists. For example, there are feminists who retain faith in positivist science but urge that it be more inclusive of all human activities. By way of contrast, feminists who adopt a critical theory perspective argue that positivist science is not value-free, and is inherently androcentric. They also contend that qualitative, or interpretive, methodologies are more appropriate approaches to studying humans and society. Feminists also propose that women are drawn to methods employed in qualitative research, owing to their familiarity with sharing experiences through informal interviewing.

Qualitative methodologies have emerged and become accepted, especially in disciplines such as Nursing. Yet they differ from traditional Science along several dimensions. Ontologically, there is no single reality 'out there' to be discovered, and epistemologically, a qualitative researcher interacts with participants in the research instead of keeping an objective and artificial distance between researcher and subjects. As qualitative methodologies have developed, so has the terminology associated with research been adapted or changed, so that concepts such as transferability, credibility and rigour are more usually used (Creswell, 1998, p76).

Systematic reviews, a reductionist process in themselves, are the pinnacle of evidence-based practice. To fully engage with evidence-based practice, nurses will need to become familiar with systematic reviews and hierarchies of evidence, which themselves are a form of Foucauldian governmentality. Whilst the evidence-based practice movement incorporates the assessment of the economic implications of interventions, systematic reviews need to be regularly updated and these are costly and require considerable time to complete. Hence, Winch, Creedy and Chaboyer state that it may well eventuate that "certain clinical specialties will be given priority for review over others, possibly according to those treatments, practices and conditions that are the most costly to the health service" (2002, p159). They caution that the flow-on effect of this will be a narrowing of nursing research priorities, subject to economic restrictions. This is likely to be an unintended consequence of the evidence-based practice movement, but it is one example where Science 'takes on a life of its own'.

Indeed, Grypdonck contends that belief in evidence-based health care and consequently in the credibility of randomised controlled trials, is based on faith rather than logic or rationality, partly because it is not feasible or proper to conduct a randomised controlled trial "to substantiate the contribution of EBM (evidence-based medicine) to public health" (2006, p1374). Kitson (2002) perceives the ideologies of evidence-based practice and patient-centred care as oppositional to one another, a view extended by Whall, Sinclair and Parahoo (2006), who contend that the contemporary definitions of evidence-based nursing that include patients' preferences, cultural aspects of care, expertise of clinicians, and so on, are not consistent with either logical positivism or verificationism; and they claim that until the philosophical underpinnings of evidence-based practice are explored, nurses will not fully adopt evidence-based nursing and hence its potential will not be realised.

It has been proposed that there are patterns of knowing in nursing, in addition to the traditional scientific approach. Fawcett et al. (2001) built upon Carper's 1978 work, about four patterns of knowing in nursing, by conceptualising each of these patterns of knowing as theories, each with their associated modes of enquiry that produce different types of evidence. Whereas the empirical pattern of knowing constitutes the Science of Nursing, and corresponds to the more traditional view of Science/Medicine, nurses need to be able to base their practice on evidence that relates to their moral obligations, interpersonal relationships and the "art and act of nursing" (Fawcett et al., 2001, p116). Thus, while agreeing with Ingersoll et al. that the randomised controlled trial sits at the pinnacle of the hierarchy of medical evidence, it can not be the "only legitimate source of evidence" (Fawcett et al., 2001,

p115). More recently, Estabrooks et al. (2005) reported results of ethnographic case studies in support of the notion that nurses privilege other sources of knowledge over research knowledge that dominates the category of 'evidence' in evidence-based practice, as also reported in this study (see, for example, 6.2.4). Estabrooks et al. proposed that the importance ascribed by nurses to the knowledge acquired through experience and social interactions with other nurses, health professionals and patients, is a reflection of the practice environment in which the nurses need to deliver context-specific care. Their findings, mapped onto Carper's patterns of knowing, support the notion that there is an art of nursing, although the authors caution that because such knowledge is in the person domain it is clearly inappropriate to indiscriminately "trust aesthetic knowing, particularly that derived from or rooted in experiential knowledge" (Estabrooks et al., 2005, p473).

Snow (1990), a scientist by education and a writer by vocation, lamented the polarisation of science and art in Western society, a chasm that he thought was not crossable although he wished that it could be. These oppositional views were that the non-scientists "have a rooted impression that the scientists are shallowly optimistic, unaware of man's condition…the scientists believe that the literary intellectuals are totally lacking in foresight, peculiarly unconcerned with their brother men, in a deep sense anti-intellectual" (Snow, 1990, p170). Snow concluded that, although scientists look toward the future, society is moulded more by the traditional culture, which wishes "the future did not exist" (1990, p171). Perhaps this observation helps to explain how difficult it can be to effect change based upon Science, as reflected, for example, in literature that claims that much of health care is

not based on evidence from sound (scientific) research, or that factors other than evidence need to be considered, as in the Royal College of Nursing model, discussed in the literature review chapter (see, for example, Harvey et al., 2002; Kitson et al., 1998; Thompson et al., 2001).

Two explanations offered by Snow (1990, p172) for the 'cultural divide' between Science and the Arts were: the emphasis placed upon educational specialisation within our society, which in a health care context is manifested between and within professional groups; and the fact that societal forces work to make this divide more rigid once it is established rather than making inroads into it. Arguments within the literature abound as to what extent nursing is a science or an art, and various positions are reflected in literature that debate whether the focus of nursing and other health disciplines is primarily concerned with curing or caring (Ellstrom, 2001; Malterud, 2001; Parker, 2006; Reverby, 1989).

The popularisation of Science (referred to in 6.4.4) is not without its limitations. The popular press can trivialise Science, claiming that it can, and should be, understandable by all. Scientists sometimes 'play down' their topic, to try and involve non-scientists, to express complicated issues in simplistic terms and the media appeals to the masses through headlines such as *You get a say in nano revolution* (Tadros, 2007). Everyone nowadays seems to have an opinion about climate change, and not all these opinions are based on traditional science. Even those scientists who follow traditional Scientific Method, produce conflicting results and draw conclusions that are at odds with one another, so the opinions of the person

in-the-street are influenced by non-scientific factors including, perhaps, the personality of the scientist or the writer. Some claim that the media devotes a disproportionate amount of time to what traditional scientists term 'pseudoscience', as discussed in a recent radio show (Williams, 2007).

Science is such a pervasive, dominant theme in our lives that it can even influence the regard attributed to different fields of nursing. Whereas nursing is usually claimed to be primarily concerned with caring, rather than curing as is the case with the medical profession, the nursing activities most closely associated with care are designated (negatively) as basic, and the more technical types of nursing activities linked with Intensive Care Units, Operating Theatre Suites and other specialty units, come to be more highly valued (Stevens & Crouch, 1998). Graduate Nurses displayed their interest in technology and the 'higher status' areas, which are much more valued as clinical rotations than wards with longer-term patients (*as expressed in focus groups conducted by the Nurse Manager–Research over several years*). However, this status cannot be explained completely by the mere presence of technology. For example, although the Medical Imaging Department is replete with sophisticated technology, recently-graduated nurses do not necessarily value this area highly as a clinical rotation, compared with the Intensive Care Unit where the use of technology is inextricably linked to the nursing care of the patients. More is discussed in relation to technology later in this chapter.

7.4 Data illustrative of alternative positions to the Scientific Method

In contrast to the numerous examples within the data that supported the dominant understandings of the Scientific Method, I found few examples within the data from the Children's Ward that offered an alternative to the traditional Scientific Method, which is as expected, given the dominance of Science. Corresponding sections in Chapter Six provided examples of nurses not appreciating that qualitative research can be 'proper research' (see 6.5.1), that is, reinforcing the traditional view. An Enrolled Nurse, one of two nurses who undertook the funded research project to develop a parent-held medical record book, agreed with me when I commented that her active involvement in research had 'stirred the pot' because it had challenged the accepted view that research needs to be undertaken by highly qualified people. Whilst that project was conducted with the approval of the Ethics Committee, and the elements of planning were evident, some other so-called action-based projects were not so methodical or well thought out. Some nurses overcame their initial fears, and undertook projects, and learned as they went.

> N When you were hospital trained quite a few years ago. And um initially I was absolutely petrified because I had no idea what to do, what to do [nurse laughed]. And I thought "Oh my God how am I ever going to be able to do this?" (*Interview "D", 24-05-2005, lines 48-52*)

Nurses across the hospital found themselves in this position, of having to 'do a project' and my belief is that the quality of many of those projects suffered because they did not incorporate a methodical approach to their projects, whatever the topic or methodology. They believed that, since they were not undertaking large scientific research projects, they did not need to follow any clear-cut, recognised process.

One nurse commented that she had noticed that nurses may start research with an observation, or only undertake part of a traditional project.

> N Not take it any further, even though observation is the first step in traditional science - It's just something I've observed.
> [and later in the interview] …
> Do part of the research process, if topic of interest to them, but probably quite selective - I did do a lit review most of which. (*Interview "H", 02-05-2005, lines 376-377 and 468*)

Other nurses clearly accepted opinion over research conducted along traditional scientific processes.

> N There's new staff coming through from different places so you can ask them what they've done somewhere else or they'll volunteer the information. There, there are journal articles that you can read. (*Interview "H", 02-05-2005, lines 584-587*)

Implementing research findings into practice is multi-faceted, influenced by organisational and individual factors and, as discussed in Chapter Two, there does not seem to be a single, most effective strategy to do so (see, for example, Edwards et al., 2002; Kitson et al., 1998). The mere publication of the findings of experimental research is not adequate to effect change. Questions as to who reads the scientific journals or whether the articles are perceived to be of value to clinicians also need to be considered (see, for example, Scullion, 2002). Research designs that incorporate reflection in- and on- action do not follow the traditional Scientific Method. The research conducted about the Paediatric Outpatient Chemotherapy Service had led to change, but either some nurses were unaware that the ward routines in place were a consequence of that research, or they did not regard the research process as scientific.

> N And there had been, there'd been change for the better, but it wasn't seen as, one, proper research, and maybe it's not proper research, but there

have come about a change in practice, um, yeah. (*Interview "H", 02-05-2005, lines 657-660*)

This lack of awareness was not too surprising, given that there were no consistent processes in the ward for discussing projects that were underway, or for sharing the findings of completed projects.

7.4.1 Scientific research requires too many resources

Although nurses were required to be involved with research to some degree, as stipulated in their position descriptions, they lacked the resources to do so. Even though many nurses did not have enough knowledge about research generally, they attempted to fulfil their role responsibilities pertaining to research.

> N I don't know enough about research, even though I'm attempting to do some. (*Interview "H", 02-05-2005, lines 1093-1094*)

Other nurses offered excuses for their colleagues not fulfilling their research responsibilities.

> N Research is scary, if don't know what to do - maybe that's what puts them off doing it. (*Interview "L", 23-05-2005, line 107*)

There was a lack of knowledge about how to retrieve the information that would be of most use to them, despite having completed a couple of small research projects over the preceding years.

> N Can't find the information that I want - I like to sort of find things for myself a lot of the time. Because usually you have to know the exact question you want to ask um that's probably why I have trouble with the Internet. I never know the exact question to ask [both laugh]. So my searches come up nothing, nothing. Nothing, nothing. (*Interview "H", 02-05-2005, lines 621-626*)

The inability to provide a structured education program about research to reach all Clinical Nurses across the hospital and broader health district became, and remains, problematic. One aspect of the role of the health service district's lone Nurse Manager-Research was to assist up to 160 nurses to undertake their projects. As the annual research cycles progressed, the lack of fundamental research knowledge among the cohort of Clinical Nurses became more apparent. Added to this, the cohort is continuously changing, as Clinical Nurses advance or change positions, and nurses new to, or acting in, the Clinical Nurse role commence in the organisation. Nurses are involved in both research and quality improvement activities, and have to contend with specialised definitions and peculiar usage of commonly-used words in these different contexts. There was evidence that such terms were easily misinterpreted when applied to research, as occurred in the deliberations of the members of the working party convened to investigate a more appropriate model of delivering nursing care on the Children's Ward.

There was awareness that research requires an investment of time, even when some time is provided.

> N But there would be hours and I wish I'd kept tally and days and days and days when I did it at home to get it completed and it's all in my own time and I'm doing that as well as study. (*Interview "I", 04-05-2005, lines 394-397*)

Other nurses said that they did not want to become involved with a research project, because of the time requirements.

> N But it's just having the time as well, like, to get onto the computer to do that. If it was in a handout there on the desk or in a folder you'd just grab it and say here you go. (*Interview "R", 27-05-2005, lines 715-718*)

However, as discussed in Chapter Five, the ward was a very social place and I feel confident in asserting that nurses would be less likely to pick up their research to work on than to engage in less-focused activities for those shorter periods of time. Also, the ward's computer was located in an open office area, where there were plenty of distractions.

7.5 Challenges to the Scientific Method within the literature

This chapter section summarises some of the challenges to the Scientific Method that are explicated in the general and nursing literature. Kuhn posits that science progresses in two different ways: normal science and paradigm shifts (Harper, 2003). Normal science progresses incrementally as puzzles are solved; or new scientific worlds are opened through a revolution of paradigms (Jacobs, 1991, p25). When the transition from one scientific paradigm to another "is complete, the profession will have changed its view of the field, methods, and its goals" (Kuhn, 2003, p9). According to Kuhn, these paradigm shifts are difficult because scientists are generally orthodox and conformist in their actions, and largely intolerant of other scientists who propose new ways of thinking (Jacobs, 1991, 31). For example, a persistent belief in the 'miasma theory' about the transmission of fevers was not consistent with an alternative theory that disease could be transmitted through contaminated water supplies. A revolutionary change in thinking had needed to occur before substantial public health benefits could be achieved through subsequent improvements in sanitation (Mackenbach, 2007, ps17).

Bachelard's concept of 'epistemological breaks' corresponds somewhat to Kuhn's concept of 'paradigm shifts'. An epistemological break occurs when a new theoretical framework displaces an old one, "when new ways of looking at and thinking about something [lead to the emergence of] new norms of scientific reasoning" (Crossley, 2005, p74). According to Crossley, Bachelard places "great emphasis upon error and the surprises thrown up by errors" (2005, p75). Science and knowledge move forward because of what we learn when "we get things 'wrong' and our predictions are not born out" (Crossley, 2005, p75). One difference between Kuhn and Bachelard, is that Bachelard pays more attention to how the paradigms (although he does not use this term) change as a consequence of new knowledge, and hence how progress occurs.

Another challenge to orthodox science is the anarchistic theory of knowledge proposed by Feyerabend, who claims that science progresses "by proceeding counterinductively…[and that] the only principle that does not inhibit progress is: anything goes" (1988, p5). He proceeds to explain that, historically, Science has progressed either because thinkers were able to resist being constrained by the rules, or they broke the rules (Feyerabend, 1988, p14). Postmodernist researchers aligned with Lyotard's writing, would also break with the rules of conventional wisdom (Holmes & Warelow, 2002, p96). Laudan claims that even philosophers, including Lakatos, Feyerabend and Kuhn, who have taken seriously how science evolves, have paid inadequate attention "to the non-empirical dimensions of scientific debate" (1977, p66), and contends that "*the problem-solving effectiveness of a theory depends on the balance it strikes between its solved* [empirical and conceptual]

problems and its unresolved [anomalous] *problem*s" (Laudan, 1977, p67, italics in original).

Ravetz is amongst those who challenge the dispassionate, linear model of the Scientific Method. Scientists need to "make subtle, personal judgments regarding tools, data and the like. These judgments are personal intuitions and interpretations, conditioned by practical craft knowledge…that are transmitted through informal channels…in scientific communities" (Jacobs, 1991, p35). Latour and Woolgar (cited in Mulhall, 2002, p49) were amongst the first sociologists to identify that laboratory science was value-laden and socially constructed. There are several strands of disagreement with science and its method that are presented in the media, including those found under the topic entry 'Antiscience' in *Wikipedia*. Kurtz (1994) presented a summary of ten categories of objections to science, in an article titled *The growth of antiscience*, which included the fear of a nuclear holocaust, the environmental movement, challenges to orthodox medicine and proliferation of alternative therapies, mistrust of biogenetic engineering, and renewed interest in fundamentalist religion.

Notwithstanding challenges to the theory of science, empiricism remains the dominant paradigm of science within Medicine, which has led to the subjugation of nursing knowledge because nursing practice is generally viewed as supporting the directions of the doctors (Henderson, 1994; Winch et al., 2006). This viewpoint differs to that of others who recognise that nursing's goals differ to those of medicine's, and as such, "nursing is a profession complementary to medicine;

intrinsically different, but of equal value" (Clay, 1987, p113). Nurse theorists have argued that nurses have tacit knowledge that is not derived from the scientific biomedical approach (Winch et al., 2006, p94) or as Clay asks, "surely…the scientific, unemotional, logical male world of medicine is only part of the story" (Clay, 1987, p113). An over-emphasis on the scientific or empiricist approach implies that any intuitive bases to nursing practice would need to be discarded (Winch et al., 2002, p158). Webster and Osborne, agreeing with work by Pravikoff and Donaldson, 2001, state that "many patient care issues of interest to nurses are not researchable using the randomised controlled trial" (2005, p40). Randomised controlled trials, upon which evidence-based practice is based, "seek to exclude contextual or seemingly irrelevant concerns" (Whall et al., 2006, p32); and it is these contextual issues with which nurses are often most interested, as in the research projects conducted on the Children's Ward pertaining to parent-held record books and to the experiences of parents whose children were undergoing chemotherapy as outpatients. At times, research questions of interest to nurses are more appropriately answered by qualitative research designs, and Levin and Feldman (2006) argue that there are now alternative hierarchies of evidence for those types of studies that are more likely to be investigating aspects of the 'art' of nursing than of the 'science' of nursing, and that it is a myth, perpetuated via the dominant discourse of Science, that evidence for nursing practice must only be quantitative in nature.

It might be argued that nurses have, therefore, had to embrace multiple research methodologies to complement multiple sources of knowledge for practice, to ensure that research incorporates the clinical experience context (see, for example, Georges,

2003; Jennings & Loan, 2001). When nurse researchers wish to investigate this tacit knowledge, or topics such as the experience of patients, they need to convince ethics committees, which are still dominated by doctors and those who have a traditional understanding of the scientific approach, of the importance and relevance of their research. Therefore, nurse researchers who subscribe to a choice of knowledge-generating methods will necessarily recede into the background, as Aronowitz (1998a) has claimed in his critique of science as power. Because the scientific approach is the dominant method for producing nursing knowledge, Foucault's "critique of science as a disciplining and normalising form of social control becomes pertinent…once again" (Winch et al., 2002, p158).

Everyday dictionary definitions of 'evidence' vary. Although Medicine has usually interpreted it as evidence of effectiveness, evidence of appropriateness and of factors that affect decision-making are two other types of evidence necessary for health-care practice (Popay, 1998, cited in Mulhall, 2002, p51). Grypdonck (2006) argues that research undertaken through qualitative methodologies is better suited than the traditional experimental designs of randomised controlled trials to provide information about appropriateness. Davies et al. summarise a much broader group of definitions of 'evidence', which would include "any observation on an issue" (Kitson, 2002, p180). Nurses in the current study sometimes employed this type of definition, as they also broadened, or 'stretched', the meaning of research to lay uses such as 'looking up something'.

With respect to clinical research, Miller and Crabtree argue that the biomedical paradigm "tends to be atheoretical, hospital based, and disease oriented" (Miller & Crabtree, 2003, p403). They propose that qualitative and quantitative research should be intertwined, much like the strands of DNA, with the design being driven by the research question rather than by positivism. They would prefer that qualitative research methods address "issues of context, meaning, power, and complexity [with] quantitative methods providing measurement and a focused anchor (Miller & Crabtree, 2003, p407), with research questions being the connecting points between the two strands. They suggest that such a model would lead to greater understanding that would in turn lead to improved patient care.

Yet, with specific reference to Medical Science, Aronowitz (1998a) claims that the substantive funding is devoted to investigations of treatments of diseases which are accepted as being inevitable, rather than to investigations of causal factors that are intrinsically linked with the social system and hence should be examined in ways other than the reductionist methods of orthodox science. Medical scientists work with the chemistry of the body, in fragmented ways. This approach, however, can produce more problems. For example, the development and use of medications to treat an illness may lead to side effects on other parts of the body, producing additional health concerns and requiring greater investment into researching cures for those unintended consequences. In such instances, medical scientists are enslaved to the paradigm of normal science, and rarely question it.

Two medical oncologists and a statistical consultant (Stebbing, Dranitsaris, & Vincent, 2007) recently offered sobering words of advice about potential and actual dire consequences of implementing treatment protocols that have been developed from findings of controlled experiments conducted in ideal clinical settings with ideal patient populations. The presentation of approximately 10,000 scientific papers at the American Society of Clinical Oncology's annual meeting may well be stimulating, but Stebbing, Dranitsaris and Vincent presented a convincing case that, whilst these clinical trials of new anti-cancer treatments may have been well-conducted, their external validity needs to be questioned in light of the fact that most hospitals are not centres of excellence and patients who present for treatment are not as homogenous as those included in clinical trials.

Pearson claims that nursing science is less attractive to funding bodies or the general public because its focus is on the "apparently ordinary aspects of life that most of us take for granted when we are in control of them, but which become incredibly important when they move out of our control" (2000, para13), and that nursing research into these concerns is best approached by methodologies that are not based on positivist science. Habermas agrees with scientists that information obtained through empirical science has produced considerable advances for society. However, this information has only served "the expansion of our power of technical control" (Habermas, 1970/2004, p82). This emphasis on technical knowledge may explain Medicine's emphasis on finding scientifically-explained causes and cures for diseases, rather than a comprehensive approach to care for people with illness (Short et al., 1998, p107). Empirical science cannot elicit information that falls within

Habermas' practical or emancipatory knowledge-constitutive interests. This emphasis on investigating what can be technically defined may also extend to the allocation of resources within the health budget to positivistic scientific research over other types of scientific enquiry.

7.6 Data illustrative of the problematic nature of Products of Science

As explained previously, the nurses routinely used artefacts and resources in their 'work' and 'non-work' lives, much of which they may not view as technology (Barnard, 2006). However, there were instances of technology being used for reasons other than its original intention, and of differing opinions as to how machines and other products of science should be used, and the purposes that technology should serve.

7.6.1 Technology does not have all the answers; sometimes technology is misused

There was recognition that technology is a two-edged sword. Whilst it was useful in the provision of care to the children, it could also produce problems of its own. For example, an experienced paediatrics nurse expressed her concern that over-reliance on technology was contributing to the deskilling of nursing staff, as in the following interview excerpt.

> N People are losing their skills of assessment because they're technologically dependent on what this machine says, or that machine says, and we're really losing a lot of that clinical skill…Where a lot of

> those assessment skills are those acquired skills that aren't quantifiable and, they're precious though…
> And there's an innate, in your assessment, you just know when you look at a kid and they're well or they're not. (*Interview "H", 02-05-2005, lines 290-293, 298-300, 302-304*)

Perhaps the nurse was expressing the need to balance the use of sophisticated technology for surveillance of patients with what can be observed directly by the nurse without machinery, as discussed by Sandelowski (2000c), or the nurse may have been expressing her concern that technology is linked to scientisation and dehumanisation of nursing and medicine (see, for example, Lawler, 1991; Sandelowski, 2002; Short et al., 1998).

Computers were originally introduced into hospitals for primarily administrative tasks, for example, to record patients' demographic details in record databases, assign medical record numbers, manage appointments, for word processing functions and, later, to analyse the data pertaining to reasons for admission, length of stay, and so on. Gradually, computers have been used in administrative functions associated with staffing, such as rostering of nursing staff and linking rosters automatically with payroll functions, and tracking expenditure against ward budgets. Increasingly, Nurse Managers use computer programs to manage their staff, for example, by looking for patterns of sick leave and deployment. Some nurses believed that this was a 'misuse' of the technology, in the sense that it was being used for a role not anticipated when computers were originally introduced (*field notes, 12-01-2005*).

It is interesting to note that sometimes the use of technology gives rise to the need for additional technology for surveillance. For example, some medications need to be

stored in the refrigerator within a certain temperature range, and the nurses implemented the associated task of monitoring its temperature as part of quality assurance activities. Were they distrustful of the technology and its maintenance, or were they being hyper-vigilant in light of a break in the 'cold chain' of stored vaccines at another health facility (*field notes, 27-10-2004*)?

Nurses sometimes demonstrated a mistrust of, and frustration with, computer technology. Often, they were unable to locate the information that they required, and that should have been attainable electronically. For example, all nursing procedures are published on the health district's Intranet, yet many nurses were more comfortable with being able to refer to hard copies of procedures, so they often printed out and kept the paper copy of a policy, procedure or other document. In many instances, it is reasonable and appropriate that nurses have a paper version of a procedure with them to refer to, say, when setting up for a procedure with which they are not very familiar. They believed it wasteful to discard the paper, so placed it in a folder, for possible future use, although this meant that it was conceivable that they would at some time refer to an outdated document (*field notes, 29-09-2004*). Perhaps nurses were also cautious because they had been 'let down' by computers in the past. For example, I witnessed an occasion when a nurse was not able to print a copy of her *PowerPoint* presentation, the printers seemed to be set up differently to usual, and she could not access a 'home' drive as she should have been able to (*field notes, 24-08-2004*). Also, sometimes the computer network was 'down', which caused major disruption to many of the routine activities on the ward. Such occasions fuelled scepticism about the reliability and authority of Science.

The computers provided a mechanism to share resources, including education modules, between health facilities. Shortly after discussions on the ward about how best to provide some information pertaining to paediatric resuscitation, the Nurse Manager–Research became aware of computer-assisted learning modules about the resuscitation of children and provided the electronic link to the Acting Clinical Nurse Consultant. When that Nurse could not locate the Website, even though it was on the health department's Intranet, the Nurse Manager–Research provided a hard copy of the document. Subsequently, the Acting Clinical Nurse Consultant acquired a paper copy of a *Basic paediatric life support learning guide 2004* from another hospital, made minor modifications to adjust for local information, but made no changes to the 'science'. Of the several possible meaning fields attributable to this instance, including technology is not always intuitive and/or it is better to defer to experts, and/or the nurse was too tired from working night duty to contend with computer problems, this last meaning field was believed to be the most probable at that time.

A clear example of people taking technology for granted, and in some cases not thinking for themselves, was when the mechanism of the entrance door to the ward was faulty. Although anyone could then enter without needing the usual swipe-card access, visitors, including hospital staff, followed the rule to ring the buzzer (*field notes, 19-10-2004*).

7.6.2 Caution needed with other Products of Science

I have alluded to the usefulness of medications that are developed scientifically, particularly in emergency situations and the treatment of some exotic diseases, rare

syndromes, and chronic diseases. There are risks, however, of more severe side effects associated with these increasingly potent products. In one such case, it was fortuitous that a particular nurse was aware of the possibility of such side effects, and communicated the warning signs of these to her colleagues (*field notes, 16-12-2004*).

Even the correct way to apply particular wound care products was contested. During a visit to the specialty Children's Hospital for a Chemotherapy Workshop, nurses enquired about techniques of dressing wounds, and discovered there were differences in how burns were 'dressed'. There was considerable debate about 'which way up' a specific product used on the Children's Ward should be placed. Nurses with considerable experience with burns had placed it either way up, but the company representative recommended one particular side should face upwards although she, also, conceded that it did not really matter (*Interview "D", 24-05-2005, lines 580-582*). Consequently, other nurses asked the question, "Who do you believe, the company representative or the person who uses it all the time?" (*Interview "N", 07-07-2005*). This was not an easy question to resolve, and certainly some 'antiscientific' nurses did not concern themselves too much, or they viewed it as another example of an individual's attempt to make sense of science.

7.7 The literature does not always support a positive view of technology and other Products of Science

Modern empirical and theoretical science cannot be separated from technology; in this respect it is 'technoscience' (Aronowitz, 1998b). Some people take a negative

view of this interrelationship of science and technology that built up particularly during the twentieth century, describing it as a 'long shadow' that had extended past industry to the extent "that the scientific/technological worldview had become a distinctive ideology, and had penetrated culture to its foundations" (Aronowitz, 1998a, p122). Others are less negative and claim that it is necessary to find a middle ground between optimistic and pessimistic perceptions of our technological culture and its problems (Tiles & Oberdiek, 1995, p28).

Both science and technology are "interlinked in the process of discovery and development" (Barnard, 2002, p16). Scientists use technology to make their observations, and technological innovations are often the products of science. Not only do scientists rely on technology for their observations and experiments themselves, they often design, adapt and modify "machines produced for other uses to the specifics of their own projects. Thus, the machine mediates observations, but the observer creates the machine as a fetishised object" (Aronowitz, 1998b, p24). Wound care products are results of science and technology that nurse clinicians, including those on the Children's Ward, use every day; Rudge describes wound technoscience and its relationship to nursing practice, and critiques how advertising "makes a fetish of wound care products" (1999, p175).

Despite newspaper headlines such as *Science the saviour, says Frazer* (Davies, 2007b), the products arising from the scientific efforts to predict and control nature have not been as liberating as might have been anticipated. Indeed, Aronowitz claims that despite some advances, "science has been one-sided" (1998b, p21). An

insistence on the authority of science can lead to the misapplication of research to the broader culture, as in, for example, the links between molecular biology and genetic determinism. Scientists and scientific institutions are also complicit in the inappropriate application of their science; "scientists have little alternative but to ignore the fact that the uses to which their work is put may be reprehensible or salutary" (Aronowitz, 1998b, p22). Medical advances through Science have effects throughout our lifespan, even though the products of Science have been used in ways not originally envisaged by their creators. Conception can be planned, and in many instances it is assisted through the science of in-vitro fertilisation; scientific advances increase the probability of survival of neonates, and increase longevity and maintain life, although often at the expense of more co-morbidities, which themselves require the application of science and technologies to treat (see, for example, Bates & Linder-Pelz, 1990; Tiles & Oberdiek, 1995). The public, as consumers, have come to expect that there will always be a treatment available, and rarely openly or publicly debate the ethical and moral aspects of the allocation of finite health resources. Also, we may lack the power to influence the direction of technologies, if indeed we can foresee and agree upon the best future uses of technology. This is largely because individuals and even governments are not able to control the "industries which have accumulated political and economic power through the development, marketing and use of technology" (Tiles & Oberdiek, 1995, p28). We have come to rely upon technology and science; it has invaded our 'lifeworld'. Habermas is "sceptical of the tendency of Enlightenment (and Marxist) thinkers to automatically link technological progress with social emancipation…[and suggests

that the key]…is to make the technical side serve democratic ends and not the other way around " (Kaplan, 2004, p5).

Computers are representative of the influence of technology on contemporary culture, and have had both positive and negative effects on it. Computers have been used to direct weaponry in world conflicts; whilst at the same time enabling communication between soldiers and their families across the globe. In cases such as these, we judge the 'goodness' of a technology by who uses it and for what purpose (Tiles & Oberdiek, 1995). Computers are indeed labour-saving and can help make our lives more comfortable; the incorporation of computers into everyday items such as washing machines and air conditioners are examples of this. Miniaturised pacemakers can be implanted, with the assistance of computers, into patients to keep their hearts beating and thus prolong life. There was much technology used by nurses in the Children's Ward on a daily basis, including patient-controlled analgesia machines, pulse oximeters, and digital thermometers. We easily become captivated by what technology can do for us, and we are often unaware of the extent to which it has infiltrated our lives. Perhaps we rarely take time to consider the ethical implications of technology in practice; or ponder whether caring can "be enacted in technologically complex environments or [whether nurses are] merely machines" (Barnard, 2002, p21).

However, our society has developed a dependence on computers; and computerisation of some industries has led to enormous losses of jobs with associated social consequences, as foreshadowed by Marx. Nurses in this study

needed access to personal computers to order meals for the children, view X-rays, check the results of pathology tests; and they were expected to use electronic communications to send and receive information such as minutes of meetings, policy changes and research reports. In health care, we rely on computer-driven machinery for our observations of the patients. Whereas nurses previously held patients' wrists to feel and count their pulses, some nurses now rely on machines that can be programmed to record observations at prescribed intervals. However, the machines only count pulses; they do not assess characteristics such as the regularity or strength of the pulses, which can best be achieved by the nurse's personal touch.

As mentioned earlier in this chapter, technology can influence the distribution of power. For example, as Sandelowski (2000b) has pointed out, thermometers and telephones assisted in maintaining the lower professional status of nurses and the separation of roles, largely because their use was delegated to women. The emergence of telephone nursing has added further ambiguity to interactions because the nurse is invisible (Sandelowski, 2002). Sandelowski also cautions that newer, more sophisticated technologies such as tele-medicine may do little to progress the professionalism of Nursing whilst nurses continue to assume the role of presenter, "to hold patients and/or instruments in place for physicians" (2002, p66). Paradoxically, it has also been argued that patients' experiences with nurses who are proficient with technology can increase Nursing's relative "prestige and power" (Barnard & Sandelowski, 2001, p372), reflecting the dominance of Science within the general community.

Most technologies have disadvantages. I have introduced the idea that in the Children's Ward and across the hospital, staff had become dependent upon computers, and indeed the electrical power supply for equipment that relied upon computer technology. There were some power outages in the hospital during the study, but these were mainly seen as interruptions to administrative work. However, the hospital is located in a part of Australia that is subject to cyclones and, as such, there are strategies in place to ensure that power supply is maintained to the vital equipment that is distributed throughout the hospital, and not restricted to the critical care areas. The hospital is the headquarters of the Helicopter Retrieval Service for a large part of the State, and this Service will obviously be affected by adverse weather conditions.

The mere existence of a helicopter requires additional technology, including sophisticated communication technologies, to maintain it and provide the services, otherwise people in the more rural and remote areas will suffer disproportionately to those living in large metropolitan areas. However, considerable resources are needed for this Service and there is much debate about how resources in health care are distributed. The view popularised on television reality shows is that technology saves lives, and that the health care system can save most lives. We expect that premature neonates will survive with minimal long-lasting health problems, and much money is devoted to ensure that critical care areas are well-resourced; not surprisingly, lower-technology areas such as aged care feel that they are under-resourced.

Sometimes, technology as apparently innocuous as the telephone can adversely affect the peace and tranquillity of our home lives as well as the comfort of the patients; a telephone cries out to be answered, and if we answer our home telephone we might be besieged by a telemarketer. Telephones can ring at any time of the day or night in a hospital unit, and there may be some delay before they are answered; in any case, they contribute to the overall noise level in the ward environment.

It is difficult to keep abreast of technology, and its rapid development is linked to consumerism. The public is bombarded by advertisements for the latest mobile phone, a smaller *MP3* player or *iPod*, and multi-functional printing-copying-scanning-faxing devices that they are told they 'cannot do without'. Technological products are designed to persuade those with disposable incomes to buy the product and, as such, investment into the development of technology is driven by consumerism rather than a purely scientific motive. Humans create technology and then others find different uses for it than those envisaged by the scientists responsible for its invention. Sandelowski (2000b) offers the example of the telephone that was originally intended to be used for succinct conversations, having been conceived similar to the now-defunct telegraph, but without which we find it difficult to venture outside our homes.

Sandelowski (2000a) challenges the traditional understanding of technology as being a 'Product of Science'. She claims that "the close tie that now exists between Western technology and science is fairly recent, since what is currently referred to as technology used to be more closely linked to art and craft by virtue of an emphasis

on design, aesthetic vision, utility, and skilled making" (2000a, p33). Technology arose out of scientific endeavours that emulated the thinking and goals of the Enlightenment period, to control nature, and early technology clearly followed from Science; however, "contemporary science and technology are so intertwined as to be often indistinguishable" (Sandelowski, 2000a, p33). This dependency of technology on science may not hold true nowadays. Technology use can lead to developments in science, for example our understanding of thermodynamics developed from the invention of the steam engine (Sandelowski, 2000a, p33).

Published research reports can also be conceived as 'Products of Science', and some literature discussed in Chapter Two identified that nurses in a clinical setting experienced difficulty retrieving and understanding the reports, identifying the relevance of these findings to their practice, and proposed that the researchers had a responsibility to ensure that their findings are disseminated appropriately (for example, Gerrish et al., 2007; McSherry & Simmons, 2002; Meah, Luker, & Cullum, 1996; Mulhall, 2002; Thompson et al., 2001; Veeramah, 2004; Winters et al., 2007).

7.8 Chapter summary

In this chapter, I have presented a selection of the counter-arguments to the discourse of Science that have built up over time, and the critical and sceptical standpoint, illustrated in the research data and the literature. Whilst few would advocate discarding Science completely, there are some cautionary messages. We rarely question Science because it has become so dominant, colonizing our lifeworld as Habermas might say. Science affects the way we think and feel, so that we perceive

the world as an object of scientific curiosity and are largely unaware of, or show little regard to, alternative viewpoints. This is surely a dangerous tendency, and is at odds with the idea of both rational science and a rational society. Science has crept into parts of our lives very distant from the laboratory, and it influences how we think about interpersonal and life skills. The role that Science has played in the regulation and bureaucratisation of our society can be seen if we take a step back and reflect, something in itself that is at odds with the Scientific Method.

The data illustrated that the nurses sometimes challenged the prevailing dominance of Science. Although the examples were not as numerous as those in support of Science, there was 'evidence' that nurses:

- Demonstrated some suspicion of Science and resisted changing their practices based on research alone
- Considered that knowledge acquired through experience was extremely important to their practice
- Recognised that findings from research that used methods other than the experimental method had important implications for their work
- Struggled with technology and other products of Science when they failed to lead to efficient and effective work practices, or lessened the human contribution to their practice.

The strategies that the nurses used to deal with the tensions between the opposing views they held of science will be discussed in Chapter Nine, together with the recommendations that are proposed from the analysis of the findings of the study.

The following chapter, Chapter Eight, presents a discussion around a second dominant theme that was evident in the data, that of ‘Identity’.

Chapter 8: The Nurse Identity

8.1 Chapter introduction

This chapter presents an analysis of the data that related to the theme of *Identity*, with a discussion of the corresponding literature. At the outset it is recognised that there is diversity in the definition of terms, particularly *Self* and *Identity*, with authors sometimes using terms interchangeably and at other times clearly demarcating between concepts. There are numerous theoretical models described in the literature, reflective of the diverse theories pertaining to Identity (Arthur & Randle, 2007; Ashmore & Jussim, 1997; Leary & Tangney, 2003). The use of terms such as 'self', 'self-concept', 'personal identity and 'social identity' within the literature is confusing (Levine, 2005), and I have not endeavoured to provide a theoretical exposition of opposing viewpoints, having decided to approach the topic broadly, aware that there is no single agreed discourse. The considerable diversity has proven somewhat problematic, and difficult choices with respect to how this chapter has been conceived had to be made. Although the discourses around Identity are not as clearly separate as those around Science, an analysis of the data about identity is warranted, because of its role as a "goal or standard for the self within social roles or social situations" (Hitlin, 2007, p250).

Identity is a contested term, but at the most basic level, we claim who we are and who we are not, that is 'self' and 'other', and many authors favour a relational view of identity, where "one cannot have self without other" (Crossley, 2005, p146), and it is by knowing the other that we can know ourselves. One definition of identity is

"the conscious awareness of knowing who one is" (Graham, Sorell, & Montgomery, 2004, p253). Personal identity is about what sets us apart from others, whereas social identity is about what we have in common with others (Crossley, 2005, p145), although there is a degree of uniqueness in the groups to which individuals choose to associate themselves. "An occupational identity may just be one of a number of other possible identities that make up the overall identity of an individual" (Kirpal, 2004, p279). It is important to consider the contribution that a social identity makes to our personal identity. According to social identity theory, "social identity serves as a source of self-esteem. Generally speaking, individuals strive to maintain or increase their self-esteem" (Devos & Banaji, 2003, p159). Our selves are largely defined by our group memberships, and this is why we take attacks on the groups to which we belong so much to heart, as if they were personal attacks on ourselves. Preferring to use the term 'self-concept' to 'identity', Arthur and Randle claim in their overview of the literature pertaining to the professional self-concept of nurses, that "it is established and developed as a consequence of nurses adopting the generalised perspective of other nurses" (2007, p61).

Identity theory posits the link between social roles and one's identity, being that "social roles are expectations attached to positions occupied in networks of relationships [and] identities are internalized role expectations" (Stryker & Burke, 2000, p286). Multiple identities are not equivalent to multiple roles that we adopt, with most people having "multiple senses of self, such as the private, public, and collective self" (Triandis, 1989, cited in Matsumoto, 2007, p1310). Multiple identities "require the *internalization* of role-related expectations and their ordering

in a hierarchy of salience" (Stryker & Burke, 2000, p291, italics in original), although it has been shown that some women organise their various role-related identity structures in ways other than hierarchically (Graham et al., 2004). Values are also linked to identity and constructs such as self-esteem, with values forming "the core of the self and direct[ing] the adoption of the various identities we claim" (Hitlin, 2007, p256).

Self and identity have been topics of scientific analysis since the publication of James' *Principles of Psychology* in 1890, although the Self has been the topic of intellectual discussions since the time of Plato, and even earlier in Eastern civilisations, owing to humans' unique capacity for self-reflection (Leary & Tangney, 2003). Subsequently, there has been a proliferation of publications within the behavioural sciences under an increasing number of index words, accompanied by daily discussions of related topics within the popular media. Psychologists, sociologists and anthropologists have pursued particular aspects of identity and self. Other key historical figures after James, in the conceptions of self and identity, include Freud, Erikson, Foote, Cooley, Mead, Blumer, Goffman, Allport, and Stryker, all of whom have extended our understandings along different trajectories (Arthur & Randle, 2007; Ashmore & Jussim, 1997).

Although this chapter is organised a little differently to the preceding chapters that discussed the theme of Science, once again an organising framework has been used to present the examples from the literature and the data. There was a considerable amount of data and literature pertaining to a broader understanding of the

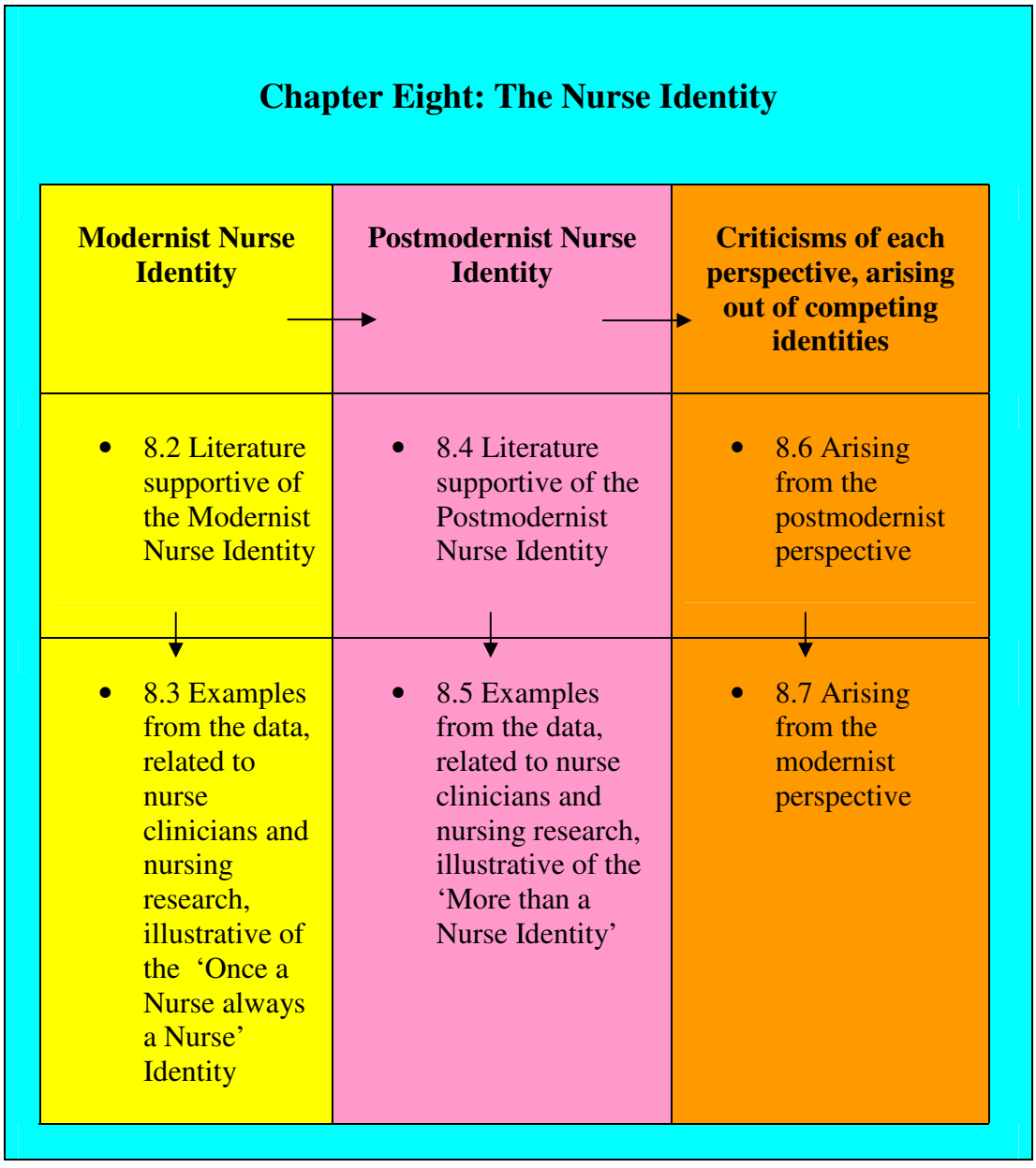
professional nurse, but word limitations have necessitated that I focus my interpretation on the data that relates to nurse clinicians' engagement with research, within the broader context of the literature pertaining to (Nurse) Identity. Mirroring the previous two chapters about Science, Identity can also be discussed in terms of the developments of the concept from the Enlightenment period, and alternative viewpoints. Thus, the material is organised around two polarities, which I have defined as the Modernist Nurse Identity and the Postmodernist Nurse Identity, although Giddens might prefer to substitute high modernist for postmodernist (Kashima & Foddy, 2002, p201). This is not to suggest that certain characteristics can only be found in one or other of the perspectives, or that these perspectives are mutually exclusive; there are plentiful examples from the data that illustrate that people occupied positions within and along the spectrum, and that these positions varied according to the situation. Rather, the distinction is used to emphasise the differences between the views and make explicit what was implicit in the data.

In the context of this study, the Modernist Nurse Identity is one encapsulated in the phrases 'once a nurse, always a nurse' or 'only a nurse', and the alternative, or Postmodernist Nurse Identity, is encapsulated in the phrase 'more than a nurse'. I do not intend to infer that any particular identity is more positively-regarded than another, nor any more correct or appropriate than another. There is no consensus as to what a universal Nurse Identity should be. There are tensions and disagreements as to what concepts belong within each of these categories of identity, but the categories serve as a useful organising and analytical tool and I have conceptualised them as "families of ideas" (Traynor, 2007, p300). Stereotypes are pervasive, most

often harmful because they portray negative perceptions rather than an accurate picture of the reality of a particular role (Fletcher, 2007), and Darbyshire (2006) cautions those who proclaim that one portrayal of nursing is more correct or real than any other, because to do so, silences other nurses. By using two polarities of the Nursing Identity, I am not concluding that one more closely represents the reality of nursing than the other – they were both evident in this critical ethnography.

The chapter begins with a description of the theoretical literature around a modernist view and associated Nurse Identity, followed by examples from the data representative of such a position. Following this, a similar discussion of the theoretical literature around postmodernist views, and examples from the data representative of these alternative views are presented. The ways that competing identities were manifested in the data, and an explanation of some of the conflicts that arose from these different positions, are then provided. The organisation of the chapter is depicted in Figure 8.1.

Figure 8.1 Diagrammatic representation of the organisation of Chapter Eight



8.2 The Modernist Nurse Identity, as presented in the literature

Conceptions of 'Self' and 'Identity' have changed over time. For the purposes of this analysis chapter, the characteristics of the Modernist Identity that I have emphasised are those that developed out of the Enlightenment Self as understood from a Western European and North American background. A Modernist Self is "an individuated agent, endowed with the universal capacity for reason" (Kashima & Foddy, 2002, p183) in contrast to an earlier collectivist and conformist identity.

With specific reference to helping professionals, Siebert and Siebert claim that individuals' "personal and professional standards…are one and the same" (2007, p50), and it is this idealized view of a helping professional that is often held by the patients, families and friends. Siebert and Siebert claim that "helping professionals self-select into their professions because of past histories and personal identities that included highly developed personal standards of morality and service" (2007, p50). In a pilot study that examined reasons why males chose a nursing career, the influence that having family members who were in the nursing or allied professions was evident, even though the males themselves did not offer this as an initial motivation (Whittock & Leonard, 2003). Such a modernist view of a health professional would contend that individuals will strive to ensure consistency between their personal and professional identities.

The Modernist Nurse Identity, as I have interpreted it, comprises a merging of qualities from different stages in the development of the discipline of nursing. Aspects of the stereotype of nurse as a ministering angel, such as selflessness,

dedication, self-sacrifice, caring, and feminine, are merged with aspects reflecting the influence of nursing's military origins, which include being a subordinate assistant to doctors, obedience, and service to medicine, into the Modernist Nurse Identity.

Thus, added to the characteristics of rationality, autonomy and individualism, that conform to the Enlightenment picture of man, the Modernist Nurse Identity might also be claimed to include values such as selflessness, altruism, an associated degree of subservience, an ongoing commitment to nursing throughout life, and thus a valuing of ongoing learning (Bixler & Bixler, 1945). Although at times this combination of service and intellectualism seems a little incongruent, I have come to terms with these tensions by understanding that the Modernist Nurse Identity reflects nurses' conception of rationality as striving to have the required information with which to make decisions, believing that this would in turn lead to professional nursing care. That is, it is more likely that a nurse sympathetic to a modernist identity could best 'serve' the patients by having the knowledge that supports a more rational approach to care, rather than relying on a ritualistic approach to care; to combine science with clinical judgement when making decisions about the nursing care to be provided to patients, would be part of a professional Modernist Nurse Identity. Perhaps the revision of early definitions of evidence-based medicine (practice) to include clinical judgement and patient preferences, reflect a compromise between science and the need to accommodate moral and social obligations of healthcare professionals. This relationship between skills, knowledge and caring is discussed by Coombs, who claims that intensive care nursing combines nurses'

competence with increasingly sophisticated technology with the "compassion and the humanitarian aspects of nursing" (2004, p9).

It is a long-established and commonly-held view that females are more emotional than men, and thus are not as logical or rational as a professional should be. Whilst it was considered appropriate to foster the nurturing, gentle, moral qualities in nurses, it was also important that those aspiring to be professional nurses and succeed in a male-dominated health care system needed to control their dangerous female emotions. Also, the keeping of emotions in check is consistent with denial of the natural self, a sensitivity to the needs of others, and subservience to the system. Although women were seen as intellectually inferior to men, during the Victorian era nursing began to be viewed as a socially-acceptable occupation for respectable women to assist the poor in society. To reconcile the utilitarian and moral aspects of the nursing role "it was important that the women themselves be highly controlled and disciplined" (Traynor, 2007, p301). Nursing identities in Brazil changed, as nursing developed from its roots as a moral duty to a more academic profession, from the traditional caring emphasis to one which was colder and more rational (de Meis, de Almeida, & da Silva, 2007, p325). The authors explain that the emphasis on caring is very much associated with the type of nursing a mother might perform within her home, but professional nursing requires the containment of unnecessary sentiment whilst increasing the emphasis on technical skills; in a way, to become more masculine.

Reverby discusses many of the tensions inherent in an identity whereby nurses try to reconcile their "duty to care for others and the right to control their own activities in the name of caring" (1989, p471). This caring obligation is "integral to the female sense of self" (Reverby, 1989, p471). And the authoritarian style of nursing schools "instilled in nurses idealism and pride in their skills [which enabled] virtuous women to contribute to the improvement of humanity by empowering them to care" (Reverby, 1989, p476). Nurses' intrinsic value of self-sacrifice leaves them vulnerable to being exploited, and it has recently been suggested that nursing education has a role in nurturing and supporting the development of the professional self, which would assist nurses to balance their values with transcending a powerlessness in the system (Pask, 2005).

The public image portrayed by a social group is also inextricably linked with discussions of identity; it has been claimed that "nursing's public image is a mirror of nurses' perceptions of self" (Roberts & Vasquez, 2004, p202). Roberts and Vasquez claim that it is difficult to steer individuals toward a career in nursing because its public image portrays a lack of autonomy and assertiveness. Such an image supports the depiction of nurses being an oppressed group (see, for example, Coombs, 2004; Roberts, 2000; Street, 1992a). 'Nurse' is still intertwined with 'feminine', 'weak' and 'emotional' in many languages (Roberts & Vasquez, 2004, 202), in spite of the Enlightenment ideals of rationality and reason. Whilst tertiary nursing education works against the stereotype of the 'ideal nurse' being driven by a sense of vocation, nurses are still part of a broader society, which has retained the

stereotype of nurses being subservient to doctors (Fealy, 2004). This must be a source of tension to university-educated nurses.

Studies have revealed that the American public align themselves to a modernist perspective of nurses and nursing. Respondents, drawn from a group of shoppers at a local mall, to a survey about personality characteristics associated with thirteen professions indicated that they retained traditional views of nurses, which were not necessarily in accord with views that the nursing profession might prefer to emphasise (Kaler, Levy, & Schall, 1989). Nursing was the profession deemed to be most concerned for others, and the researchers concluded that descriptors such as 'warmth', 'generous', 'emotional', 'cooperative' and 'follower' were largely associated with the female sex-role stereotyping of nursing. The public's view did not resonate with "nursing's expanding emphasis on scholarliness" (Kaler et al., 1989, pp88-89). More recent research and commentary also indicates the persistence of this traditional view of nurses and nursing (see, for example, Aranda, 2007; Daly, Speedy, & Jackson, 2006; de Meis et al., 2007; Della, 2006; Fealy, 2004). Indeed, popular television shows, emanating from the United States of America, continue to portray nurses as the doctors' assistants and emotional members of the workforce, very much in the background of care delivery (Aranda, 2007). This situation may be changing a little though, with American nurses proactively providing information to the producers of some of these shows so that the portrayal of nurses more closely reflects reality. However, journalists and other media personnel rarely seek the input of nurses about issues pertaining to health and the health services and, conversely, many nurses are reluctant to be involved in politics (Della, 2006). Of course, there

are some nurses who continue to practice nursing long past the usual retirement age, because of their love of it, and many of those nurses are vocal in their support of disadvantaged groups, as indicated in the obituary, titled *Lifelong Nurse was born with the caregiving gene*, published in the *Washington Post* in March 2008, of Mrs Hamblen, a nurse who retired at age 81 years. Nurse Hamblen could be considered emblematic of the Modernist Nurse Identity described in this chapter.

Kalisch and Kalisch (1986) suggested, in contrast to Darbyshire (2006), that there are nursing realities that can be manipulated within the media to help recruit and retain nurses. They concluded that the images of nursing portrayed within print, movie and television media between 1920 and 1980 of young, childless, Caucasian females who were subservient to and less intelligent than doctors, are not the realities that nursing should choose to convey, given the power of such media to influence perceptions and choices. The nurses on the Children's Ward during the greater part of this critical ethnography were indeed females younger than 35 years old, but the majority had children of their own. As will be described in Section 8.3, many did value service to others, even though Kalisch and Kalisch claimed that this attribute was not well-represented in the North American mass media.

Nurses portray an image through the uniforms they wear. In a study that asked patients to associate thirteen characteristics of nurses with three uniform options, the white uniform was most often linked, by elderly patients in particular, with nurses being professional, efficient, competent, confident and reliable, whereas a uniform with a print top was most frequently linked with nurses being approachable,

empathetic, caring, cooperative and attentive (Skorupski & Rea, 2006). The study did not provide for a non-standardised uniform option, which was that preferred by many of the nurses on the Children's Ward in the current study. One nurse, who projected a Modernist Nurse Identity, sometimes wore the current print shirt but sometimes wore a superseded white uniform dress, as if expressing a nostalgia for the days – real or imagined – when such a uniform was standard.

The traditional view of the nurse is shaped by the education systems within a Western society. Nurses have been socialised to support this modernist perspective, through both hospital-based and tertiary-based education, which has contributed toward similarities between the nurses on the wards. A study of Australian first- and third-year nursing students indicated that they may well undergo professional socialisation toward the values and personalty traits of the type of nurse valued by nurse clinicians. Those values remained consistent with traditional Nightingale values of placing patients first, "viewing nursing as a calling [and] regarding oneself in the service of humanity through nursing" (du Toit, 1995, p170). A more recent study confirmed that nurses are socialised to the professional ideals as they progress through their education program (Ware, 2008). Du Toit (1995) cautions that it is risky to decree an ideal nursing identity, and questions the ethics of selecting nursing students based upon an apparent 'fit' between personality characteristics and such an ideal type, or even what nurse clinicians want a nursing graduate to be like.

Yet, the legacy of Florence Nightingale continues to dominate nursing in contemporary times (Dossey, 2005). International Nurses Day celebrations

commemorate the birth of Florence Nightingale, and each year the International Council of Nurses chooses this date, May 12, to promote an issue of concern to nurses across the globe. The Florence Nightingale School of Nursing and Midwifery, at the Kings College London, University of London, was established when nursing education moved to the tertiary sector in the United Kingdom, and replaced the original school of nursing that was established in 1860 by Florence Nightingale at St Thomas' Hospital. Many descriptors have been used in reference to Nightingale, including:

- A "fiery comet…[transforming] the world with her passage [and as] a towering genius of both intellect and spirit" (Dossey, 2001, cited in Beck, 2005b, p196)
- An 'avenging angel' (Small, 1998)
- The founder of evidence-based nursing (McDonald, 2001)
- The "soul of nursing" (Darbyshire, 2006, p52)
- A "passionate statistician" (Neuhauser, 2003, p317)
- A feminist, whose "personal and professional life indicates a way forward for the nursing profession" (Holliday & Parker, 1997, p483)
- A visionary, whose works are of relevance to contemporary and future nursing practice, and "the founder of modern nursing" (Dennis & Prescott, 1985, p66)
- A healer of legendary proportions, who pioneered "the modern administrative role of nurse superintendent with measurable outcomes supported by irrefutable data" (Dossey, 1998, p111)

- One whose "message invigorates the profession with a sense of calling and being of service in healing" (Dossey, 2005, p23)
- "An environmentalist, nurse theorist, social reformer, groundbreaking statistician, researcher" (Selanders, 2005, p65), and
- One who was part of her time, and ahead of her time (Beck, 2005a).

Du Toit suggested that aspects of a more contemporary nursing identity may develop once nurses graduate and work within a unionised workforce. However, this may take time, as newly-graduated nurses in a recent study who worked in a paediatric setting held expectations about their professional self consistent with characteristics of the Modernist Identity. These included the expectation that they needed to be competent to manage situations without assistance, and they rated themselves as sensitive and considerate (Andersson, Cederfjäll, Jylli, Kajermo, & Klang, 2007). Anecdotally, the hospital where the current study took place is a highly unionised workplace, particularly with respect to nursing. Local nurse representatives were active participants on the union's Council, and individual nurses had a history of being actively involved in campaigns supportive of the union's causes. Despite this degree of union involvement, the Modernist Nurse Identity was still very evident throughout the hospital.

Professional codes encapsulate the idealised view of the nurse and, with respect to ethics, some nurses contend strongly that the ethics and behaviours apply outside of the work role to all of the nurses' lives and roles. Certainly, professional codes have detailed the role of the professional nurses, and these have included responsibilities

with respect to nursing, as mentioned in Chapter One; and in this particular hospital, those responsibilities were clearly articulated in all nursing position descriptions (which Queensland Health insisted on calling job descriptions). Professional organisations promote the dissemination and use of research evidence in practice, by appealing to the "intrinsic motivation of nurses" (Holleman, Eliens, van Vliet, & van Achterberg, 2005, p702), which is associated with a Modernist Identity. Some examples of a Modernist Nurse Identity, presented later in Section 8.3, are focused on the nurses' engagement with nursing research.

Some of the key features of a Modernist Nurse Identity as I have interpreted it for the purposes of this analysis are:

- Nursing is a calling, which individuals can accept or reject
- Professional behaviours include the need not to become over-involved with the circumstances of the patients or, at the minimum, the need to keep emotions under control
- Rationality and reason, to guide the blending of science with clinical judgement and expertise
- Nursing care is focused on improving the patients' lives.

The following sub-section provides examples from the data that illustrate a Modernist Nurse Identity, with a particular focus on nurses' engagement with nursing research. Subsequent chapter sections present an explanation and examples of alternative understandings of the Nurse Identity.

8.3 Data illustrative of the Modernist Nurse Identity

No individual nurse in the Children's Ward consistently displayed behaviours indicative of either an exclusively Modernist or Postmodernist Nurse Identity. However, there were significant behaviours and attributes evident in the data that represented these polarities. I have presented examples from the data in relation to the characteristics of a Modernist Identity, principally:

- Expressing pride in being a traditional nurse, and in the traditions of nursing
- Seeing nursing as a calling, requiring commitment
- Controlling emotions
- Valuing education, expertise, and research, that enabled them to deliver high quality care to children
- Questioning irrationality of some situations
- Displaying concern when their behaviours conflicted with their Modernist Identity.

8.3.1 Expressing pride in being a traditional nurse

Some nurses, with Modernist Identity characteristics, clearly identified themselves as 'Nurse' or 'Sister' when answering telephones or the ward's intercom (*field notes, 18-10-2004*). Perhaps the choice of uniform was also a demonstration of a nurse's alignment with characteristics of the Modernist Identity, and they would choose to wear the Children's Ward shirts or the standardised nursing uniform, in place of more 'civilian clothes'. During the course of this critical ethnography the nursing services introduced a standardised lanyard for staff to use to attach their

identification badges, which were required to be worn at all times. The lanyard was blue, with the word 'Nursing' in white, repeated along its length. At a later date, the medical practitioners followed suit, with their red lanyards being wider with 'Doctor' written in capital letters.

Punctuality was a defining characteristic of some nurses' identities. Particular nurses would always arrive on duty early, and start working before the official commencement of their shifts (*for example, field notes, 17-01-2005*). Some nurses visibly 'worked like a machine' to get through the little jobs (*as I recorded in my field notes, 19-01-2005*). The new Nursing Unit Manager clearly preferred a tidy ward, nurses to be organised, and everything generally up-to-date rather than the presence of outdated notices (*field notes, 18-10-2004*).

Sometimes nurses waived their right to have a ten-hour break between shifts, and would be rostered for a morning shift that commenced only eight hours after having completed an evening shift. In such instances, they expressed to me that they felt bad that they were feeling weary from working a late-early shift roster, because they believed that nurses should be alert at all times, and it was wrong to feel this way (*field notes, 18-08-2004*).

Many nurses commented, and by their behaviour indicated, that it was important to present nurses' work professionally. This included the manner in which nurses documented care in the children's medical records, because that reflected on the totality of nursing, and nurses wanted their documentation to be correct (*field notes,*

17-08-2004). It has been mentioned previously, that nurses were aware that the public placed their faith in nurses, and hence there was an increased obligation to do the job well.

Whilst it was recognised that mistakes would be made, one novice nurse vowed never to repeat the same mistake (*field notes, 23-12-2004*). Echoing that nursing was a serious occupation, nurses felt their responsibilities acutely (*Interview "S", 07-07-2005, lines 751-756*), or were visibly upset if they felt that they could not give the care that they thought a child needed at that time (*field notes, 31-08-2004*). Nurses recognised their role was to consider all the needs of the children. This included the nutritional needs, and they were the members of the health care team that realised that some children in the ward long-term were not eating their vegetables (*field notes, 28-09-2004*).

Nurses stated that it was essential to fulfil all the accountabilities on their position descriptions, including research, even if they did not like to do so. To do so, they needed to learn about computers and other technology; not to do so would mean that they would impose on their colleagues.

Generally, as discussed in Chapter Five, the open office area was under the control of the ward's nursing staff, and even other health professionals were regarded as 'visitors'. The nurses exercised control over who entered that office area and, indeed, which general visitors and community groups were allowed to enter the ward. Those who identified with a Modernist Nurse Identity accepted this control as a legitimate

part of the nursing role. Those nurses were proud of the ward, calling it a 'professional unit', rather than a small, insignificant country setting (*Interview "S", 07-07-2005, lines 1527-1538*).

8.3.2 Nursing as a calling

Perhaps the clearest expression of the importance of nursing, was that it was a good job that deserved to be done properly, which was easier if you were passionate about it. Individuals were responsible for their actions, and several nurses on the Children's Ward had decided to undertake their nursing degree some time after completing their secondary education. Theirs was an active decision that nursing was the career for them (*see, for example, Interview "S", 07-07-2005, lines 297-302*).

Idealism, a characteristic of Modernist Identity, was evident in, for example, a nurse who saw the good in every situation, even those situations that were quite unusual as in the case of a child with two 'gay' dads and two mums – "so nice to have such nice parents" (*field notes, 20-09-2004*). High morals were also important to those nurses who strongly projected a Modernist Identity, with one such nurse claiming that she never lied to the patients and parents, even if that meant that she had to be very blunt with them to ensure they understood (*Interview "S", 07-07-2005, lines 1315-1321*).

Some nurses made conscious decisions to pursue specific goals in nursing, such as undertaking an immunisation course so they could transfer to Community Nursing (*field notes, 19-01-2005*), or gaining other skills that would increase their likelihood of promotion (*field notes, 09-02-2005*). Nurses who employed these strategies, from

a modernist perspective, did so because they thought that it was important to stay in nursing, but that it was also important to follow the suggestion of the most senior nurses in the organisation, to reinvent themselves and take responsibility for their own nursing futures (*field notes, 20-10-2004*).

The importance placed by some nurses on completing tasks and projects through to their completion was expressed on several occasions. Even with respect to research projects, nurses who held modernist ideals were driven by the needs of the patients and parents to complete the projects and follow through with the recommendations they had proposed. Some nurses continued with projects even after the funding ran out or they transferred to other units, because of the importance of completing tasks embarked upon, and the importance of the research to the children's ongoing care (*field notes, 23-08-2004*).

Commitment could also be portrayed by the length of time a nurse had worked in the Children's Ward. As indicated in Chapter Five, several nurses had worked in the ward for ten or more years, and they valued their stable and continued service because it meant that they had built up an intimate knowledge of individuals and families (*field notes, 24-08-2004*).

Something that puzzled me about the overall nursing services was that it was not routine to welcome nurses new to the organisation, as doctors new to the organisation were welcomed. The junior doctors rotate through various clinical areas, as do newly-graduated nurses, yet nursing services did not have such a planned

process, nor did they circulate the rotations in advance. Perhaps this reflects a modernist perspective that nurses are there to serve, in this case to serve the Nursing Division. Alternatively, those with a Modernist Nurse Identity were intrinsically motivated and thus did not require this external recognition.

8.3.3 Controlling emotions

Nurses did not deny that they had multiple role identities, such as an identity as a student, or as a parent, additional to their nursing identity (*field notes, 28-09-2004*). But they left those concerns at home when they were at work, echoing the disciplined nature of traditional hospital training when nurses were expected to 'park their personal troubles at the door', if indeed they had a life outside nursing.

Sad things sometimes happened in the Children's Ward, and nurses consciously struggled with their emotions. They got upset but were reluctant to cry in front of children or parents. In one such instance, a nurse told me that she behaved as was expected while at work, by not allowing her emotions to show, but when she arrived home she had a couple of drinks to recover from the day's events (*field notes, 20-09-2004*). I witnessed occasions when the nurses accepted that they just had to get on with the difficult jobs, such as painful burns baths, and that there was no need or reason for worrying if they were rostered for such tasks (*field notes, 26-11-2004*). Nurses steeled themselves for emotionally disturbing tasks, suppressed their natural feelings, and outwardly demonstrated control over themselves and the situation. Such a need for control also extended to not displaying their impatience with colleagues who might have had different priorities or different levels of expertise.

Recently-graduated nurses held high expectations of themselves to be proficient in everything, even though they were very junior staff, and they did not like 'letting their guard down'. There was a real concern that Children's Ward was an inappropriate first placement for a Graduate Nurse, and this put more pressure on the individual's need to appear to be controlled. A nurse who reflected a Modernist Identity also recognised her obligation to keep her emotions under control if a novice clinician made a mistake or lacked knowledge, saying that she could "not just go straight to the poor grad and go right, well you did this and grrrrrrr" (*Interview "S", 07-07-2005, lines 1148-1149*). There was often a similar self-perceived need for nurses who were acting in higher duties to demonstrate self-control and mastery of any situation in which they found themselves. Whilst most nurses on the Children's Ward were reluctant to volunteer to 'act up', certain nurses who did take the challenge were very conscious of a need to demonstrate self-control and not to display any hesitancy, while recognising that the experience gained in these positions of higher responsibility boosted their self-esteem and subsequent confidence to seek out new roles.

Individual nurses recognised that they required self-control, to keep a balance between their other commitments and their nursing commitments. This allowed them to devote themselves to their work, and to pursue postgraduate paediatric nursing qualifications, without intruding too much on their home lives.

> N I'm very easily led. Someone says "oh what's happening, having a cuppa", ok, you know, like sorry. I used to come in early before work and do my, some you know searching on the internet for assignments, I used to think gosh I'm better off staying at night at 11 o'clock when everyone's gone and the night duty girls are busy and then you know doing it

R mmm

N cause it's so difficult. I get so easily led and I think you've got to be aware of that too, in, in yourself you know and know where you're, you know, going to achieve more for your time you now and I mean yeah those days would be so precious I think, get as much as you can done because you don't want it to be interfering into your home life. You still want to do your own things you know and I think you can you know. Oh I'm sure you have to do some of your own work as well, but you know to have those days. I've seen it you know, I've seen it over the year, nearly 2 years of watching them come and go and do their research and think, I just couldn't do that because it's too much interruption you know, like (*Interview "S", 07-07-2005, lines 453-474*).

This same nurse felt it important not to 'give in' and be impatient with colleagues, even when she felt unwell and needed to finish early because of a cold (*field notes, 22-09-2005*).

8.3.4 Valuing education, expertise, and research

The organisation provided financial and in-kind resources for nurses to attend education courses and workshops, to increase their generic and specialty nursing skills (*field notes, 21-09-2004*), and assisted nurses who availed themselves of these opportunities to present their work in a public forum, to complete assignments, or to attend specialty conferences (*field notes, 21-08-2004*). Nurses aligned with a Modernist Identity regarded the acquisition of advanced and specialty qualifications to be very important, to enable them to deliver better care to the children and to be better nurses. Indeed, a nurse who was always particularly eager to learn and was proactive in seeking out educational opportunities, expressed it thus: "There's always something else to learn or something in an area that's new" (*Interview "S", 07-07-2005, lines 42-43*). Those nurses recognised that the accompanying rise in salary

from higher qualifications as appropriate where perhaps nurses who tended toward an alternative identity, regarded such financial remuneration as a 'reward' or a 'right'.

Given the explosion in information and technology, it is unreasonable to expect any health professional to know everything, so from a modernist perspective it was crucial that nurses working on the Children's Ward had specialty paediatric nursing knowledge, to enable them to provide the best care possible. Consequently, it was important to gain this specialty knowledge, and to share it with their colleagues in practice. These specialist nurses were valued, and other nurses and doctors respected that expertise. The specialty nature of the Children's Ward was reinforced through the *Ward's Orientation Manual* provided to new staff. It was also important to work in partnership with nursing students, and impart their knowledge and expertise to the next generation of qualified staff (*field notes, 20-10-2004*).

Specialty paediatric nurses had skills that were valued by other hospital services. For example, several nurses in the Children's Ward were skilled at accessing portacaths, and their skill and expertise was called upon, for patients whose medications needed to be administered that way (*field notes, 08-11-2004*). It is sometimes extremely difficult to 'access a port', and the Children's Ward nurses commented that they were pleased that they could help in these situations. Reciprocally, nurses in the Children's Ward recognised, appreciated, and called upon the specialty knowledge and expertise of others, such as the Stomaltherapy Nurse or the Diabetes Educators (*for example, field notes, 27-08-2004, 18-09-2004, 19-10-2004*). And they were

willing to share knowledge about paediatric nursing with others, including student doctors, in a collegial way (*field notes, 23-08-2004*).

Comments I heard on numerous of my visits to the Children's Ward indicated that paediatric nurses and doctors had a rapport and respect for each other, which had built up over time; but there was perhaps a level of uncertainty as to whether other teams, such as the adult surgical team, that did not have such levels of knowledge were as committed as were the paediatric teams (*field notes, 06-10-2004*). There were instances when the years of paediatric nursing experience and working together led to improved patient outcomes. In one instance, nurses drew upon their expertise and insisted on looking for, and subsequently recognised, signs of poisoning in a child who had unknowingly ingested a substance at home (*field notes, 17-01-2005*). Their prior experience, combined with a systematic approach, 'saved' that child.

Related to their expertise, some nurses expressed that nurses who worked in more rural or remote locations should avail themselves of the education opportunities available to them at this large regional hospital, in order to improve their skills (*field notes, 25-08-2004*). This could have been interpreted as pride for the Children's Ward and the nursing care provided there. Similarly, several Children's Ward nurses visited the State's specialty Children's Hospital to ascertain current trends in paediatric nursing and to refresh their knowledge. A nurse commented that there was now a distinction between the Registered Nurse and the Clinical Nurse roles with respect to the latter's research responsibilities, a distinction of which she had been unaware prior to a period of maternity leave (*field notes, 28-09-2004*).

To some extent, the development of a cohesive, specialist team meant that some of the staff presumed that others were also familiar with specific children's nursing terminology, and on occasions I witnessed behaviours during handovers that excluded those who did not have this level of expertise. I do not believe that the paediatric nurses were consciously excluding those others, it was just that perhaps they had forgotten that not everyone had the same level of knowledge. In effect, the specialisation had led to a degree of insularity. Even though specialisation of roles could lead to fragmentation of care, as in the case of different medical teams coordinating the care for different children, it was obvious that the paediatric teams believed they were more committed.

Research was valued by those nurses who projected a Modernist Identity (*field notes, 28-10-2004*). The receipt of positive feedback from parents about specific research projects reinforced to nurses the importance of being involved with research (*field notes, 17-08-2004*). Also, the recognition afforded to some nurses and their projects by senior doctors who thought that they were worthy of being presented to a broad audience, was appreciated by the nurses (*field notes, 20-09-2004*). Some nurses, however, needed to enter into 'contracts' with respect to how they would use time off-line to undertake their research projects, otherwise they would be 'lazy', which was at odds with the Modernist Identity (*field notes, 14-10-2004*). Consistent with a Modernist Nurse Identity, most of the nurses on the Children's Ward appreciated that they had a responsibility to assist their colleagues with nursing research (*field notes, 18-10-2004*).

However, many nurses and doctors identified that the types of research of interest to nurses and doctors are quite distinct, with one doctor saying that nurses do their research and they did theirs (*field notes, 10-11-2004*). A very senior doctor who also held an academic post questioned the relevance of doctoral nursing research to clinical areas. This was seen as quite a traditional perspective, reflective of who were the custodians of knowledge. Some nurses agreed that they should defer to the doctors' superior knowledge; indeed, they lamented the fact that doctors rarely delivered education session to nurses nowadays.

There were several Research Nurses within the Health Service District, who assisted with clinical trials under the guidance of medical practitioners. In the Women's and Children's Institute, the Midwifery Clinical Trials Midwife was expected, in the future, to undertake her midwifery research in addition to her involvement in trials. Also, the Clinical Nurse - Urogynaecology was, as part of her role, involved in collaborative research teams, had contributed to written research publications, and had presented research at conferences.

8.3.5 Questioning irrationality

Nurses expressed their concern at the irrationality of some nurses' unwillingness to refer to standardised, evidence-based information, and their apparent mistrust in these otherwise authoritative sources (*for example, Interview "S", 07-07-2005, lines 59-60*). Similarly, guessing the amount of a metabolic substance to be given to a child with cystic fibrosis was considered an unprofessional approach to care, as

discussed by a nurse who developed a helpful, objective guide to eliminate the guesswork (*as explained in Interview "S", 07-07-2005, lines 155-234*).

Irrational allocation of resources was also a greater concern to some nurses than others. This was discussed in the Findings chapter (5.2), with respect to staffing 'just in case' there were too many unexpected admissions on a shift, or the dilemmas of allocating the limited number of single rooms, which needed to be assigned according to clinical need.

8.3.6 Displaying concern when behaviours conflicted with their Modernist Identity

The role identity with which one identifies is "an imaginative view, idealized, and includes standards of achievement and conduct that may not be consistently attained in day-to-day life" (Siebert & Siebert, 2007, p50). Therefore, nurses who tended toward the Modernist Nurse Identity perspective were occasionally more noticeably concerned with behaviours and values contradictory to their identity, than were nurses who were more closely aligned with a Postmodernist Nurse Identity. For example, there was an occasion when one particular nurse said, to the effect, 'I'm not usually like this' in reference to her negativity at a particular point in time (*Interview "S", 07-07-2005, lines 950-951*). Certain areas of the Children's Ward were definitely the domain of nurses, and sometimes some nurses were annoyed at their colleagues who, for example, permitted children in the office area. In such

cases, they struggled with a need to keep their own emotions under control, while taking control of the situation.

Nurses were aware of what behaviours were considered 'proper' from a modernist perspective, and felt the need to justify themselves if they found themselves having a rare quiet day and were sitting around, because 'good' nurses were not expected to do that (*field notes, 09-09-2004*). Nurses demonstrated that they knew the 'correct' way to behave in handovers, and changed accordingly if someone of higher authority came in (*for example, field notes, 07-09-2004, 18-11-2004*). Similarly, when they found themselves using somewhat unsophisticated language to describe a child's behaviour, they felt self-conscious doing so because they felt that their choice of words had been incorrect (*field notes, 21-10-2004*). A competent nurse should generally take their meal breaks on time. If this did not happen, it meant that they had not managed their responsibilities and time properly. That is, they had not been in control of their shift. Yet, very traditional nurses still wanted to be able to retain some individual control over decisions they made, even if they were in relation to their own meal break times (*field notes, 14-09-2004*).

Nurses who were employed at two different levels of nursing found that it was difficult to reconcile the different priorities of the roles. For example, a Clinical Nurse who was also Acting Clinical Nurse Consultant said to me that when she was in the higher, education role she felt guilty if she was working in the office or had gone to meetings, and consequently was not out on the 'floor' with the other nurses. Another concern to her was that she often faced a dilemma knowing the correct way

to use information that came to her, because the proper actions would vary according to whether she was coordinating the shift as a Clinical Nurse or whether she was employed on that day as the Clinical Nurse Consultant (*field notes, 02-01-2005*). This nurse placed expectations upon herself and cared about her work, and the different expectations associated with the two roles made it difficult to move between the two, especially so because both roles pertained to paediatrics.

Modernist nurses recognised the importance of continuing education, but they indicated that it was their responsibility to seek this out. However, this belief was at odds with some commonly-observed selectiveness on the part of the nurses in the Children's Ward, with respect to which education events they would attend, being most likely to attend if they were taking place on the ward and were clearly focused on the children (*field notes, 24-08-2004*). The following sub-section gives an overview of the Postmodernist Nurse Identity, prior to the presentation of examples of the data that illustrated the alternative identities.

8.4 The Postmodernist Identity

At the outset, it must be acknowledged that there is disagreement amongst those who call themselves postmodernists, as to what a Postmodernist Identity is. My intention is not to debate these different viewpoints, but to endeavour to summarise some commonalities that describe a contemporary alternative to that of a Modernist Nurse Identity.

There is considerable debate as to what 'postmodern' means, and whether it is a distinct new human condition or simply represents a move along the continuum of modernism (see, for example, Kashima & Foddy, 2002; Levine, 2005). I have introduced what some might thus regard as an artificial separation between Modernist and Postmodernist Identities, and perhaps convey an inflated coherence in the respective discourses, in order to facilitate the analysis of the data. Just as the emphasis placed on rationality by modernists is questioned by postmodernists, is the universality of identity theories, such as the classic work of Erikson, questioned by those aligned with postmodernist identity theories. Postmodern identities develop in response to the postmodern context, which is characterised by "constant change, juxtaposed multiple contexts, lack of direction and scepticism toward the hope for progress, an atmosphere of relativity, extreme individualization, and a sense that reality is frail" (Schachter, 2005, p147).

Associated with the rapid pace of technological change, increasingly flexible working options and less secure employment, individuals find it more difficult to commit to a long-term career with one organisation. Instead, many will become more entrepreneurial, whereby they place greater emphasis on 'knowing how' than 'knowing that', attain a skill set that meets their needs, and hence market themselves to potential employers (Kirpal, 2004). Alongside such changes in work identity, employees with a Postmodernist Identity identify with many commitments outside work, which may be more compelling and receive higher priority than the work identity. A 'bricolage identity' can help explain "how individuals as actors take part in actively shaping their own career paths" (Kirpal, 2004, p277).

There are some parallels between alternative views to the Modernist Identity and the alternative arguments to the dominant discourse of Science, as presented in the preceding chapters. Exponents of alternative views of a Nursing Identity are critical of the universalist nature of a Modernist Nurse Identity. Discussions of the profession of nursing are culturally bound, and a postmodernist perspective questions the reliance on such a construct (Herdman, 2001). Alternative viewpoints also reflect scepticism of the Enlightenment ideals and value placed upon Science – the modernist period has not been one of unmitigated progress. Postmodernist questioning of the existence of the Enlightenment ideals of one objective truth, as discussed in the alternative discourses to traditional science in Chapter Seven, is relevant to discussions of different understandings of identity. Giddens contends that we can no longer dogmatically align ourselves with the Enlightenment emphasis on rationality, but that reflexivity is perhaps the most important characteristic of the late modern perspective, whereby "we make ourselves, and build our own sense of identity" (Tucker, 1998, p206).

Whilst Giddens claims that a defining feature of modernity is separation of time and space, and thus refers to contemporary culture as 'high modernity', the virtual communities of cyberspace seem to me to be of a quite different nature to other long-distance relationships that one may have needed to develop. Certainly, the rate of technological innovations associated with electronic communications grows incrementally. Gergen (1991) wrote his noted text, *The saturated self: Dilemmas of identity in contemporary life*, prior to the age of the Internet, and even then he spoke of the 'world of hyperreality' and the 'multiphrenic condition'. Other technological

developments, such as those associated with genetic research, can also contribute to a re-evaluation of the concept of Identity. Kashima and Foddy (2002, p202) claim that identities can be crafted by responsible self-actualizing people by such seemingly diverse mechanisms as cyberspace and gene technology. Thus a postmodernist identity is not as stable or coherent as a modernist identity (see, for example, Gergen, 1991; Levine, 2005).

Through 'technologies of social saturation', humans are socially connected to an unprecedented degree (Gergen, 1991). The exploding number of relationships we form with others makes it difficult to ascribe to the modernist belief of "the unified essential self that is supposed to exist inside each person" (Kashima & Foddy, 2002, p200). Also counter to Enlightenment ideals, as discussed in Chapter Seven, is the questioning of the existence of either a single objective reality or an associated universal truth. Thus, the postmodernist self is one that is relational, non-individualist, and non-essentialist.

The idea of nurses taking industrial action and striking *en masse* is the antithesis of many nurses' understanding of their professional identity, and is at odds with the views of nurses and nursing as embodying caring, commitment and dedication as described above in the modernist perspective. However, some nurses who participated in a national strike in Ireland validated their participation by referring to the need for professional nurses to negotiate both their economic and educational status (Brown, Greaney, Kelly-Fitzgibbon, & McCarthy, 2006, p203). Browne et al. concluded that striking helped the nurses to redefine their professional values, and

that the replacement of self-sacrifice with self-determination was “an important development in their professional role” (2006, p207).

Whereas intrinsic motivation is associated with a Modernist Identity (see 8.2), extrinsic rewards such as a pay rise, ‘employee of the month’ award, overt recognition, are associated with a postmodernist identity. Those sympathetic to a postmodernist identity accept that it is legitimate to claim reward and compensation for the importance of nursing, since their identity is not based around virtue, a key aspect of the Modernist Identity. The intense interest of many nurses in the Children’s’ Ward in lobbying for improved pay and conditions was obvious in their willingness and ability to find the time to attend union meetings during the fieldwork phase of the current study. The same passion was rarely apparent in the allocation of time and effort to nursing research.

Although nursing as a lifelong career most comfortably fits the modernist perspective, nurses aligned with the postmodernist perspective would most likely look for ways they could ‘reinvent’ themselves if they chose to remain engaged with nursing. If such lifelong learning does not result in feelings of being valued and respected, nurses who ascribe to a postmodernist identity have indicated they will leave nursing for something they perceive as more worthwhile (Jones & Cheek, 2003, p125). Perhaps an organisation that is receptive to the characteristics of the postmodernist identity would be more effective in attracting and retaining nurses, bearing in mind that recruitment and retention are matters of grave concerns internationally. There are now far more career choices open to all, in particular to females who may have in

the past pursued a career in nursing because of limited options. Also, it is becoming more common for individuals to change careers several times within their working lives. Given these factors, those nurses who align themselves with a postmodernist identity will want more than a traditional nursing division can provide in a modernist organisation, and will stay in nursing primarily as a means of achieving personal goals of greater importance to them.

Nursing research may offer an opportunity for nurses to redefine themselves, consistent with the Postmodernist Identity (Aranda, 2007). But not all postmodernists would agree with this. Consistent with Giddens' (1998) comments about the contemporary relationship between science and technology, in comparison to willing acceptance of the authority of science and technology, nurses who are sympathetic to a Postmodernist Identity might be more reluctant or less interested in engaging with research. Postmodernist nurses might question the value of research, since they are more sceptical of Science than nurses with a Modernist Identity. Scientists do not always agree with each other, and people aligned with a postmodernist perspective will be more critical of the claims of authority arising from research, which compounds their rejection of the universality and absolute authority of the methodological principles upon which positivistic science is based.

In summary, some of the key features of a Postmodernist Nurse Identity as I have interpreted it for the purposes of this analysis are:

- Reluctance to privilege one identity over other identities – their Nursing Identity is neither their sole nor most important role identity

- Acceptance of constant change
- Responsiveness to extrinsic motivation
- Rejection of the universality and absolute authority of any particular research methodology.

The following sub-section provides examples from the data that illustrate a Postmodernist Nurse Identity, with a particular focus on nurses' engagement with nursing research.

8.5 Data illustrative of the Postmodernist Nurse Identity

In a similar way to the organisation of the data illustrative of the Modernist Nurse Identity, I have presented examples from the data in relation to the characteristics of a Postmodernist Identity, principally:

- Responding to identities other than the Nurse Identity
- Welcoming change
- Responding to extrinsic motivation
- Questioning the authority of specialty qualifications and research.

8.5.1 Responding to identities other than the Nurse Identity

There were many nurses whose other role identities were clearly much more important to them than their nursing identity. For those nurses, their work needed to fit into the requirements of competing identities associated with their families and interests away from the Children's Ward, and family-friendly rostering allowed them

to accommodate these competing identities. For example, individual nurses negotiated not to work night shifts, because it interfered with their family life, but saw no problems with the consequences that other nurses would then need to work proportionally more of the unsocial night shifts. Unfortunately, some modernist nurses were always expected to work the shifts that many nurses did not want, such as when there was a party or at Christmas, and they felt as though they were being exploited. Self-rostering was introduced into the Children's Ward soon after the Nurse Unit Manager commenced, and this permitted individual nurses to have greater control over their shifts, which helped to accommodate their competing roles.

Perhaps this is why those nurses were less overtly concerned about nurses deployed to the Children's Ward for the occasional shift. They did not go out of their way to invest a lot of their time orienting the relief nurses to paediatric nursing, or even to the details of the ward and the patients (*for example, field notes, 01-09-2004, 07-09-2004*). They may have been less concerned with a skill mix on a shift's roster, because all nurses have basic qualifications that should allow them to work anywhere.

Also, these nurses did not allow themselves to get over-involved in the minutiae of work. They were less likely to read the communication book or notices on the wall. They were aware that the information was there, and they felt that they could 'take it or leave it' and did not allow themselves to take it to heart. Perhaps the fact that nursing was not their principal identity helps explain why the nurses did not feel compelled to respond to surveys, even when the results were likely to directly affect

them, such as the questionnaires that were circulated in the ward to attain everyone's input into a trial of ten-hour night shifts (*field notes, 25-10-2005*).

Social role identities away from work were very strong for some nurses. For example, the need to support a national sporting team, which had reached the grand-final stage for the first time, was overwhelmingly more important than the somewhat mundane nursing role, especially for those nurses who attended every home game and had regular seating spots at the games (*field notes, 20-09-2004*). Similarly, notices for other social gatherings such as 'baby showers'[8] were prominently displayed on what was meant to be the notice board for education and research activities (*field notes, 28-09-2004*). The nurses told me I would have seen some of their other identities if I had joined with them at parties.

These other strong identities allowed the nurses to draw on information from more perspectives, when delivering care to the children. They could better appreciate the position of parents, because of their similar parenting experiences. Sometimes, they identified more as parents than as professional carers when they chose to attend seminars directed at parents, or read self-help literature directed at laypersons (*field notes, 23-08-2004*).

Sometimes there was a need for the nurses to undertake specialty education, such as that introduced associated with changes to child safety legislation. However, these nurses contended that the time to attend such education, or meetings, or devote to

[8] A 'baby shower' is a social gathering, usually a morning or afternoon tea or party, held in honour of a pregnant woman, to which the guests bring along small gifts for the impending event.

research responsibilities within their position descriptions, needed to be provided within working hours. They recognised that such information was important to know, and that they had an obligation to attend, but they also needed to fit in with competing pressures of their primary identities and other roles.

Nurses with a Postmodernist Nurse Identity were possibly less likely to remain on the ward during meal breaks, and less likely to be heard talking 'war stories', something that nurses with a Modernist Identity were more likely to do. There were better things to do with their time than mundane nursing tasks until the very end of the shift. Certainly, you would not find these nurses deep in their nursing research projects in their own time. And they expressed their surprise when I came to the ward on public holidays or times outside my routine working hours for periods of fieldwork (*field notes, 03-01-2005*).

They were less likely to be concerned at what modernist nurses might label as 'non-professional' behaviour such as sitting on the desk. Perhaps they did not even notice it or perhaps they chose to ignore it (*field notes, 28-10-2004*). They were likewise not concerned if their colleagues were inattentive and, for example, did not lock the door to the formula room. They would quietly just lock it and get on with their work (*field notes, 09-11-2004*).

Because these nurses had competing and more important identities, they were not unduly distressed if they did not complete all of the accountabilities within their position description in the longer term, or indeed all of the nursing tasks for a

particular shift. They were not willing to sacrifice themselves for the greater good of the ward. Nurses sympathetic to alternative nurse identities, would literally interpret the suggestion of District Director of Nursing to take advantage of whatever opportunities presented them in their job whilst they worked for the health service district, without feeling obligated to stay long term.

8.5.2 Welcoming change

The roles of the Nurse Unit Manager and Clinical Nurse Consultant were considerably different to what they had been at the old hospital. Whilst modernist nurses held on to the old structures, the Postmodernist Nurses were not that concerned with the change in roles, or indeed if there were other changes in positions, because they could work around them.

8.5.3 Responding to extrinsic motivation

During the fieldwork, negotiations about which 'higher qualifications' would be recognised for financial compensation were continuing, and those nurses on the Children's Ward who were not closely aligned to a Modernist Identity were the most interested in following the progress of their applications pertaining to their hospital midwifery qualifications (*field notes, 22-09-2004*). This is consistent with the types of extrinsic rewards of interest to postmodernists, similar to a quick fix solution to problems, such as a pay rise, pat on the back, a bonus, uniform allowance; and contrasted with a modernist's interest in long-term solutions to problems, and job

security. The different bases of motivation were discussed earlier in this chapter (8.3).

Nurses were motivated to apply for certain positions because they offered the opportunity not to work on public holidays (*field notes, 04-10-2004*). Several Clinical Nurses commented that they were no longer prepared to undertake their mandatory research projects in their own time, and they would only attend meetings and other work commitments if they were paid for their troubles, or given time off in lieu (*field notes, 28-10-2004).* Some nurses were unwilling to attend work duties outside their normal rostered hours without arranging payment in advance.

At least one nurse commented on the general lack of recognition from the most senior nurses in the organisation, and expressed their disappointment that the District Director of Nursing had never engaged in a conversation directly with them (*see, for example, Interview "C", 21-09-2004, lines 395-398*). Such apparent lack of support did little to motivate the nurses to 'go the extra mile'.

8.5.4 Questioning the authority of specialty qualifications and research

These nurses did not think that it was particularly important to gain specialty paediatric nursing qualifications. After all, they were aware of the explosion of information, and were more likely to have the generic skills to seek out information for a specific purpose. These are the children of the age of the information

superhighway, and they know how to traverse it. They relished new technologies such as the latest mobile phones or household gadgets and electronics, but were selective in their uses of the computers at work. Perhaps they were frustrated if they could not easily find the information they sought.

These nurses saw value in other education, that was not necessarily specific to nursing or the Children's Ward, because it could provide the means for progressing to another career. There was a nurse who was studying at university in the field of business, so that she would be equipped to move away from nursing. As she said to me when looking at advertisements within the administrative stream, "anything had to be better than this [nursing]" (*field notes, 01-09-2004*), admitting that her care factor was "minus fifty" (*field notes, 23-12-2004*).

Nurse clinicians have a shorter-term focus than do researchers. This was especially evident in those clinicians who projected a Postmodernist Nurse Identity who might have been more reluctant to embark on or complete a project, or spend time disseminating findings from even a small project. These postmodernist nurse clinicians are also more likely to use information such as that easily retrievable from the Internet, that looks superficially acceptable, and are less likely to critique the relevance and currency of that information (*field notes, 28-10-2004*). Perhaps it was also more difficult to engage those with a Postmodernist Nurse Identity in ongoing education programs about research, especially if they were conducted along traditional pedagogic practices.

8.6 The postmodernist's criticisms of the Modernist Nurse Identity

From the material already presented in this chapter, the reader should expect that there were sometimes tensions between nurses, associated with the identity with which they were most closely aligned. However, when reading these criticisms, caution must once again be taken, in recognition that these are the extreme positions of the polarities of how I have classified the identities. Some of criticisms that a postmodernist nurse might have had of the Modernist Nurse Identity are listed below.

- The nurses who projected a Postmodernist Identity were frustrated by their modernist nurse colleagues' reticence to change and reluctance to move forward with the times, and to give up their dependence on superseded roles and responsibilities. This became evident in discussions about the role of the nurse-in-charge of the ward, which had previously been a single position, the Nurse Practice Coordinator, but changed in 2001 to two distinct roles, the Nurse Unit Manager and the Clinical Nurse Consultant. Many of the modernist nurses could not understand how these roles had changed, found it difficult to accept that the Nurse Unit Manager's role was no longer a hands-on one, and they even thought that it was an extremely recent change, when in fact the change had taken place several years previously, prior to the establishment of the new hospital (*for example, field notes, 02-01-2005*).
- The postmodernist nurses viewed their modernist nurse colleagues as old-fashioned, particularly when they heard them use terms such as 'Sister' or 'Nurse' instead of the postmodernist nurses' preferences for first names. Similarly, those nurses who were not comfortable with the use of computers

and other technology were sources of frustration to nurses aligned with a Postmodernist Identity.

- Perhaps the use of the title 'Nurse', as medical practitioners use 'Doctor', would contribute to increasing the perceptions of nurses' autonomy (Fletcher, 2007). Whilst some traditional nurses used the term, other nurses who viewed nursing as a transitory phase in their life perhaps were not interested in using the title 'Nurse', and in my work role I more often heard derision of such an action, consistent with a Postmodernist Identity.
- The sense of martyrdom associated with a traditional nurse identity was not acceptable to a postmodernist nurse, who saw little of value to such a perspective. Similarly, they questioned the value of modernist nurses investing additional time or effort into their jobs, because of the lack of recognition that was received, and the fact that they believed it perpetuated a subservient role. Postmodernist nurses often thought that the modernist nurses were too prim and proper, and that they had failed to recognise that the parameters of acceptable behaviour had changed. For example, they were not concerned if Student Nurses sat on the desk, something that would have been unacceptable to a nurse who projected a Modernist Identity.
- Postmodernist nurses thought that modernist nurses were 'mugs' for undertaking additional education in nursing just for the sake of it, and they were more questioning of some of the compulsory education.
- With respect to the work on a shift, postmodernist nurses could not concur with the modernist nurses' need to always be busy; if the work was done

early there was no need to seek extra work, certainly not nursing research (*field notes, 29-09-2004*).

- The postmodernist nurses were less concerned if they did not work the same sides of the ward on subsequent shifts, as was preferred by the modernist nurses who did so because they felt they could keep 'on top of things' and provide greater 'continuity of care' (*field notes, 06-09-2004*). Postmodernist nurses felt that they could build up the necessary rapport with children and parents quickly enough, and if they found it difficult to establish that rapport, they could still continue with their work.
- Nurses aligned with a Postmodernist Identity were also critical of modernist nurses who indulged parents unnecessarily, for example, by arranging follow-up appointments on their behalf. The postmodernist nurses expressed that the parents were quite capable of taking the necessary steps to make their own appointments, and it was inappropriate to 'baby them' (*field notes, 29-09-2004*).

8.7 The modernist's criticisms of the Postmodernist Nurse Identity

The criticisms of the Identities were not one-way, and some of criticisms that a modernist nurse might have had of the Postmodernist Nurse Identity are listed below.

- Modernist nurses were very frustrated by their colleagues who were not primarily committed to the nursing role, because that reflected a lack of commitment to caring and to the profession. Part-time work could also result from a lack of commitment, and modernist nurses would question the opportunities of those who did not work full-time to be able to effect

sustained change from research projects. For example, one nurse expressed that her colleagues who I would identify as aligning with a Postmodernist Nurse Identity did not see the link between research and patient care, when she said "They're not interested, they don't care" (*Interview "D", 24-05-2005, line 145*).

- They expressed their annoyance that some nurses did not see the value of undertaking additional study, or gaining expertise; many things then always fell back to a select 'dedicated' few. This was seen as a lack of commitment to the organisation and to the profession.
- A modernist nurse became frustrated if nurses showed a lack of respect through non-punctuality. Aware that parking was usually very problematic and in short supply, a modernist nurse aimed to arrive at work well before the start of the shift, and voiced her frustration at nurses who always arrived in the ward at the exact commencement time of the shift, but were not ready to start work immediately.
- Inattention to the niceties, such as the tidiness of the ward, was a criticism of the postmodernist nurses by the modernist nurses, who did not believe it was adequate to just do the tasks and leave, without considering the needs of colleagues over a twenty-four hour period. For example they expressed annoyance at those nurses who did not put things away, or who overfilled the sharps containers. Such actions posed a safety risk, and modernist nurses found it difficult to understand how some of their colleagues could be so lazy and inconsiderate.

- Perhaps those nurses who aligned themselves with a Modernist Identity perceived those who identified with a Postmodernist Nurse Identity as lacking in manners.

8.8 Chapter summary

This chapter has presented an overview of two polarities of a Nurse Identity, the dominant one being the Modernist Nurse Identity, and the alternative one being the Postmodernist Nurse Identity. Examples from the data, particularly data collected during the periods of fieldwork, were provided to illustrate characteristics of each polarity. As expected, examples of the Modernist Nurse Identity were more numerous.

Whilst identity research indicates that there might be some universal characteristics of humans, such as: ethnocentrism, which helps in-groups to survive; self-other knowledge; and the desire to continually seek improvements of their creations, actual behaviour, however, is guided by culture, although a wide degree of variation in behaviour is acceptable within any context (Matsumoto, 2007, p1303). The nurses who projected a Modernist Nurse Identity displayed some in-group bias, which led to the formation of cliques but which did not overly-concern those who projected a Postmodernist Nurse Identity. "Ingroup bias occurs automatically or unconsciously under minimal conditions" (Devos & Banaji, 2003, p158), and group membership is inextricably linked with self identity, and people "automatically endorse attributes stereotypic of their group as also being self-descriptive" (Devos & Banaji, 2003, p156).

Recent debate about identity "has focused upon the issues of fixity (or lack of it) and contextuality" (Crossley, 2005, p145), and this fits with the Postmodernist Nurse Identity, which is relational and more dependent upon circumstances. Many of the nurses who I understood to represent this Postmodernist Identity viewed their nursing role more socially than did the modernist nurses and, outside of work, were more consumer-oriented, a characteristic that may also have been reflective of their younger age. They may have also reflected the increased contemporary emphasis on "increased 'identity politics'" (Woodward, 1997, cited in Crossley, 2005, p146).

There were tensions evident between the different identities, and there were examples of where the tensions were related to research and science. The following chapter explores how nurses dealt with the competing tensions to preserve their sense of self, in the context of the nursing research culture of the Children's Ward.

Chapter 9: Cognitive dissonance, nurses' strategies, and recommendations

9.1 Chapter introduction

The three preceding chapters, Chapters Six to Eight, have presented arguments in relation to two dominant themes, Science and Identity, which emerged from the study data. This chapter presents an analysis, from the perspective of cognitive dissonance theory, of the strategies that nurses adopted to deal with the tensions that arose because of competing viewpoints. Following a brief overview of cognitive dissonance theory, including its development and application over time in different situations, examples are drawn from the data to illustrate the various actions that nurses employed to reduce associated dissonance. In recognition of the predictive character of cognitive dissonance theory, the chapter concludes with a section devoted to recommendations arising from the analysis of the study data, that it is believed will support nurse clinicians' involvement with research.

9.2 Cognitive dissonance theory

Cognitive dissonance theory has been extensively studied since the publication of *A Theory of Cognitive Dissonance* by Leon Festinger in 1957, in which he suggested "that people who simultaneously held inconsistent cognitions were 'in dissonance'" (Draycott & Dabbs, 1998, p341). The unpleasantness of inconsistent cognitions motivates people to act to change their cognitions, and sometimes their manifest behaviours, in order to reduce this dissonance and to create a greater degree of

consonance of cognitions (Cooper, 2000; Dickerson, Thibodeau, Aronson, & Miller, 1992; Draycott & Dabbs, 1998; Dunn, 2003; Meyer & Xu, 2005; Strongman, 2001). Cognition, as explicated by Festinger, is "any knowledge, opinion, or belief about the environment, about oneself, or about one's behavior" (1957, cited in Dunn, 2003, p985).

Over the last fifty years, the theory has been extensively tested, although this has usually involved conceiving of a person's attempts to deal with dissonance from an individual rather than from a group member perspective (Cooper, 2000, p227). An early experiment by Festinger and Carlsmith (1959) is representative of many that have examined induced compliance in different situations, such as people publicly expressing something at odds with their privately-held beliefs. By offering students monetary compensation to convince other students that a boring, repetitive task was challenging and enjoyable, Festinger and Carlsmith (1959) demonstrated that the individuals could, and did, change their cognitions. An important finding in this and subsequent experiments was that the greatest change came when the monetary reward was minimal. In such situations, the individuals experienced a greater degree of dissonance because they acted contrary to their beliefs for minimal gain, in contrast to other situations where behaving differently to usual could be justified in light of substantial monetary inducements (Aronson, 1980). Cognitive dissonance underlies research in contemporary psychology which refers to the evolutionary and biological bases for the desire for consonance (Crigger & Meek, 2007; Egan, Santos, & Bloom, 2007; Giosan, 2004; Hampton, 2004; Matz & Wood, 2005; Moreno, 2006; Reddy et al., 2007; Uecker, Regnerus, & Vaaler, 2007; Van Dijk & Kirk, 2007).

9.2.1 Dissonance arousal

Dissonance arousal occurs in the several types of situations, including when:

1. Participants are responsible for the inconsistency (Wicklund & Brehm, 1976)
2. The consequence of actions, whether in fact they are to some extent foreseeable, occurred (Draycott & Dabbs, 1998, p345)
3. Consequences of actions are experienced as aversive (Draycott & Dabbs, 1998, p349)
4. Actions conflict with the person's self-concept (Aronson, 1980, p19).

The duration of dissonance and when dissonance-reduction strategies will be employed, are a matter of debate and empirical inquiry (Elliot & Devine, 1994, p392). The reintroduction of the original conflicting cognitions will most likely extend the dissonant state (Draycott & Dabbs, 1998, p347). However, Aronson concludes that stronger changes in attitudes occur in situations where personal involvement is greater and "*external* justification for the action [is smaller]" (1980, p7, italics in original).

9.2.2 Reducing dissonance

Inconsistent cognitions create dissonance, "and as dissonance arousal increases there are increased attempts to reduce or eliminate it" (Wicklund & Brehm, 1976, p314), because of a preference that individuals have for consonance (Dunn, 2003, p985; Meyer & Xu, 2005, p77). Dissonance can be reduced in four ways, as portrayed in Table 9.1.

Table 9.1 Ways of reducing dissonance

Ways that dissonance can be reduced (Wicklund & Brehm, 1976, p10)	**Example related to smoking** (as described by Meyer & Xu, 2005, p77)
1. Remove the dissonant cognition	*A smoker rejects the evidence of the harmfulness of cigarettes*
2. Reduce the importance of dissonant cognitions	*A smoker claims that there is less need to be concerned because associated diseases take so long to eventuate*
3. Add consonant cognitions	*A smoker claims that smoking assists to reduce weight gain*
4. Increase the importance of consonant cognitions	*A smoker claims that the pleasure obtained from smoking is more important than a long life*

The primary ways by which an individual manages dissonance depend upon the situation in which the forced choices need to be made. Which response is selected may be influenced by two factors: "the salience of the response and the 'cost' associated with it" (Draycott & Dabbs, 1998, p349). When choosing between two favourable alternatives, the attractiveness of the selected alternative is magnified whilst the attractiveness of the non-selected, or rejected, alternative is minimised; and when choosing between two alternatives that would usually be avoided, the attractiveness of the selected choice is magnified. In any situation in which dissonance is experienced, individuals will seek out information that will decrease that dissonance and avoid seeking information that could further increase the dissonance (Wicklund & Brehm, 1976, p314). Cooper (2000, p233) suggests that the

particular strategy an individual employs to reduce dissonance is also related to the interrelationship of social identity and group membership, and Stone and Cooper (2001) further explored the role of the 'self' in dissonance arousal and dissonance reduction.

9.2.3 Uses of cognitive dissonance theory

The premises of cognitive dissonance theory have been replicated many times, and have evolved over time, as summarised in several overviews of the cognitive dissonance literature (see, for example, Draycott & Dabbs, 1998; Greenwald & Ronis, 1978; Wicklund & Brehm, 1976). Because cognitive dissonance theory "combines elements of social interaction, motivation and cognition" (Draycott & Dabbs, 1998, pp341-342), it has practical applications in clinical psychology. Draycott and Dabbs propose that outcomes "may be better if therapy is hard work which the clients feel they have freely chosen to do" (1998, p350). This conclusion has direct relevance to the current study, in which nurse clinicians found the conduct of nursing research to be difficult, but were required to undertake this mandatory component of their position descriptions.

With specific reference to nursing, cognitive dissonance theory has been used to explain sabotage in the workplace (Dunn, 2003), knowledge and attitudes associated with smoking (Clarke, McCann, Rowe, & Lazenbatt, 2004), and differences encountered by novice nurses between the ideals of nursing and the realities of practice (Meyer & Xu, 2005). Because of its role in explaining relationships between motivation and behaviour, and its predictive aspects, I have used cognitive

dissonance theory as an organising framework for this final stage of data analysis, and as a basis for the recommendations section of this chapter.

9.3 Strategies that nurses employed to reduce cognitive dissonance

This section provides examples of how nurses used each of the four means of reducing dissonance to manage contradictory and conflicting cognitions, relevant to the themes of Science and Identity, in the context of developing a culture of nursing research in the Children's Ward. Even those nurses who were somewhat disenchanted with nursing believed that they were competent professionals, took their responsibilities seriously, and endeavoured to deliver a high quality of nursing care to the children. The dissonance in relation to research arose out of varying beliefs about the extent to which they were also obligated to fulfil all the accountabilities within their position descriptions, which required them to engage with nursing research and evidence-based practice.

9.3.1 Examples of removing dissonant cognitions

Some nurses reduced dissonance associated with research by rejecting one of the fundamental claims creating the conflict. In particular, there were several examples of nurses rejecting the claim that nursing research is an essential activity in the role of every professional nurse. This was especially the case in relation to the role of nurses whose primary responsibility is direct patient care. They felt justified in adopting this stance because only this hospital was known to have enacted a career structure which formally required nurses to be engaged with research, and for the

level of engagement to increase with increasing seniority. This allowed for nurses to appeal to the suggestion that although no other hospital required the same level of engagement, nurses in those hospitals would be no less professional in their care. Some nurses elected to stand down from their Clinical Nurse role because they believed that working at a lower classification would enable them to live up to their standards of clinical expertise by relieving them of the obligation to undertake a research project. This strategy enabled those nurses to maintain that they were good clinicians, without the unwanted burden of undertaking research.

Another example of how they could remove the dissonant cognition was to minimise their involvement with research. Cognitive dissonance theory asserts that it is only necessary to take the least amount of action necessary to bring about consonance. Thus, by doing the least necessary to ensure that they would not be actively pursued for failing to submit a project, they could remove the dissonant cognition because they had undertaken their project but they were not overly-concerned with the standard of their research efforts. Also, by making a pretence of doing their action-based research projects with the least amount of effort necessary, some nurses may have felt that they were 'beating' the system, because they fundamentally rejected the requirement.

9.3.2 Examples of reducing the importance of dissonant cognitions

Consonance can also be increased by reducing the importance of the conflicting claims. Given that research is part of the position descriptions, and nurses accepted that they were professionals, they reduced the importance of the first cognition by, for example, claiming that it is unreasonable to be expected to be proficient in all aspects of their roles. They could draw on numerous examples of more senior nurses who had not, to their knowledge, undertaken nursing research. Therefore, it was 'not really that important' to be significantly engaged with nursing research.

Some nurses minimised their engagement with research by 'off-loading' their responsibility to another person, principally the Nurse Manager-Research. Although that Nurse Manager's role is to support nursing colleagues through their own research projects, this support would become so extensive for these nurses as to relieve them of the main responsibility. In this way, they could claim that they did not mind doing their research and that it was 'not that difficult' because they would be assisted to succeed. They did not see this as an exploitative strategy which effectively circumvented their research responsibilities.

Alternatively, some nurses reconciled their professional role with their lack of participation in research by claiming that the kind of projects they were required to undertake did not constitute 'proper research'. This was a view held by those nurses who supported traditional, positivistic science, and who did not accept that local, action-based research was 'real' research. Scientific research, they argued, is too big

and too difficult; they are not equipped to do it and so it should be left to the experts. In this way, an appeal to their standpoint on science and research enabled them to achieve greater consonance between their cognitions.

9.3.3 Examples of adding consonant cognitions

A frequently occurring strategy was the use of 'excuses', or consonant cognitions, as to why they could not accommodate research into their clinical roles. These nurses agreed that it was important to be involved, but made excuses such as: that there was a lack of time; that their part-time employment prevented them from being fully involved; that they were junior in their roles and it was more important to master the clinical aspects of the role than to undertake a small research project; and that they could fulfil the research demand at a later date.

Nurses who had not submitted their research projects for that year received a letter from the District Director of Nursing reminding them of their obligation, asking what assistance they would need to meet the requirement, and setting a deadline for responding. Since they were required to complete an annual action research project, these nurses had already completed a number of projects. They were therefore able to reduce their cognitive dissonance by making the consonant claim that they had already done their fair share of research.

9.3.4 Examples of increasing the importance of consonant cognitions

Some nurses reduced dissonance as above, not by rejecting research but by emphasising their expertise in paediatric nursing over other cognitions. In its starkest terms, the nurses were making the claim: "I provide high quality care because I am an expert clinician and that is what counts". This represents a dissonance reduction strategy by emphasising a consonant cognition. They were the clinical leaders in the ward, people whom their colleagues consulted when facing clinical dilemmas. This strategy of emphasising expertise often dovetailed with a similar emphasis of the cognition that it was far more important for them to use their available time to provide care. In this case, the nurses did not seem overly-concerned with their failure to meet the obligation to conduct research because other aspects of their clinical roles were more important. If they left the ward to pursue their research, it was argued, the patients would receive sub-standard care and this would be unacceptable and unprofessional. This entitled them to treat their research obligation casually.

Faced with dissonance arising from the belief that nursing research was part of their professional role and their commitment to being professional in their actions, yet lacking research skills, some nurses took action to improve their knowledge and skills. They attended courses, utilised on-line learning modules, attempted projects, and volunteered for larger research projects. Thus, where they had previously believed themselves as lacking in those attributes, they now believed that they had at least a beginning level of proficiency with research, and some had actually enjoyed

their research experiences, so that there was no longer any dissonance between those beliefs. This reinforced the faith they had in their own capabilities, and that they could acquire new and valued skills. It reaffirmed the view that they were, after all, confident and competent nurses, and that nursing research was just another competency to master.

9.3.5 Impact of cognitive dissonance strategies

The above sections illustrate that all four means of managing dissonant cognitions were employed at some stage by the nurses in the study, with individual nurses employing a range of strategies: some employing them consistently, others inconsistently, and some changing from one strategy to another over time and in response to changes in personal circumstances and the work situation. Although dissonance causes people to feel uncomfortable, individuals may not need to adopt radical strategies in order to reduce it to a manageable level. In practice, however, some nurses in the study did more than was necessary and some utilised strategies so tenaciously that they became problematic.

There were positive consequences to the organisation, to the nurses and to patient care, arising from some of the strategies used by nurses to attempt to reduce their dissonance. Many nurses were committed to their research responsibilities. Management supported their involvement, and there was a substantial amount of goodwill on the part of all those involved.

Positive consequences to the individual nurse, the nursing services, and the organisation included the following.

- Nurses who engaged with research were aligned with the strategic directions of the nursing services and of this regional hospital. The goal, of being 'a good place to work', was reinforced, with a consequent improvement in the hospital's reputation among the broader nursing community, and increased retention of staff.
- Greater retention of staff further enhanced the reputation of the nursing services, which could then promote the opportunities afforded to nurses, particularly in relation to research and evidence-based practice, even though the hospital was located in a regional location, which was often seen as a detractor by nurses in the capital city.
- Nurses who 'gave research a go' and acquired research skills to enable them to meet their accountabilities, increased their opportunities for future promotion, because they had acquired new skills and knowledge.
- Nurses who engaged with research were given opportunities to relieve in roles at higher levels, including relief of the Nurse Manager-Research position.
- Some nurses proactively sought opportunities to discuss with senior nursing officers the difficulties they had encountered undertaking their action research. These dialogues were welcomed by the District Director of Nursing and the Nurse Manager-Research; different voices were being heard, and it was more likely that those concerns would be considered, than would the viewpoints of those nurses who had adopted a more negative strategy.

- Those nurses who felt that their points of view had been listened to, were even more engaged with research and evidence-based practice, and assisted colleagues who were less experienced with research to adopt a positive approach.

Positive consequences to patient care included the following.

- The adoption of the strategy to use research to investigate an issue of clinical concern had direct positive effects on the patient care provided. For example, over several years, Clinical Nurses from the Children's Ward explored how the care and service provided to children who were undergoing chemotherapy could be improved.
- Nurses who engaged with research and evidence-based practice contributed to the status of the profession of nursing, which was noticed and valued by patients.
- Nurses who elected to disseminate their research reports effectively, and to utilise research findings in practice, advanced the public's perception of the professional status of nurses and progressed the way that other health professions regard nursing.

Alongside these positive consequences, some of the strategies used by nurses were detrimental to the organisation and nursing services, to the nursing profession and individual nurses, and to patient care. Negative consequences to the organisation and nursing services included the following.

- Minimal engagement with the stipulated research responsibilities associated with each level of appointment undermined the uniqueness of the hospital and the nursing services. It is very difficult for one public hospital to stand out from among others when they must all follow corporate policies. However, the nursing services at this particular hospital believes that it is important to have a distinct vision, and nurses who did not engage with research were ultimately rejecting that vision. This was viewed by some staff as arrogance; a perception that was liable to undermine mutual respect and teamwork.
- In a similar vein, lack of engagement with nursing research was liable to be viewed as disrespectful of nursing management. This lack of respect contributed to a culture of negativity and poor staff morale, which was widespread in the hospital's nursing service.
- The organisation's goal to establish evidence-based practice across all services was threatened by nurses' rejection of their professional responsibility to be aware of recent research and to implement research findings. For nursing, this diminished the effort that had already been expended to establish a firm evidence-based ethos.
- Recruitment and retention of nurses are of significant concern worldwide. This hospital, because of its location in a regional city, has a more restricted pool of relief staff from which to draw, than might be available in a large metropolitan city. Nurses may be attracted to the hospital through its national and international recruitment campaigns, but many nurses are attracted to new places of employment through a hospital's reputation, conveyed through a very active 'nursing grapevine'. Nurses always seem to 'know someone

who knows someone', and call on those networks when considering moving to a new region/facility. Unfortunately, those nurses who were very aggrieved by their nursing research responsibilities could tarnish the hospital's reputation. How unfortunate it would be if potential employees were deterred because of negative viewpoints about a single aspect of nurses' position descriptions.

- Nurses who did not actively acquire skills related to research and evidence-based practice adopted a victim role, which was a way of thinking that nursing services had been working hard to overcome. Part of the strategic directions of the nursing services had been to move nurses from this victim stance to one where they could create their own opportunities; that is, from an 'I can't' to an 'I can' position.
- Regrettably, when nurses rejected outright the claim that they should undertake their own research, they did not avail themselves of the opportunity to engage in rational and reasonable discussions of their differences and with nursing administration. Such discussions could have helped to inform the senior nurses of how best to address the problematic nature of clinical nursing research.
- The strategy employed by some nurses, whereby they relied on the Nurse Manager-Research to ensure that their research efforts were accepted, meant that she, in turn, had less time to devote to other projects, or to develop educational resources that might have assisted nurse clinicians to participate in research.

- Similarly, the time required by the Nurse Manager-Research to follow up those nurses who did not complete projects in a timely manner and who had not kept her informed of their progress, was 'wasted', in the sense that an inordinate amount of her time was consumed by a few individuals, with less time available to assist the majority of nurses to develop their research competence. Those nurses, in turn, were likely to become frustrated when the Nurse Manager-Research was unavailable to them.

Negative consequences to the individual nurse and to the nursing profession included the following.

- Nurses who claimed that they should not need to undertake research because of a belief that nurses in other hospitals did not have a similar obligation, reflected a narrow, outdated understanding of professional nursing, which put them at odds with some of their colleagues and with the nursing services.
- Nurses who dismissed the importance and relevance of nursing research were poor role models for their nursing colleagues, and were less equipped to mentor junior nurses.
- Those nurses who limited their involvement with research were unable to develop their own research skills and knowledge.
- The belief that years of experience should be the criterion for advancing to higher levels of nursing was contentious. Contemporary human resources practices demand that applicants for promotion demonstrate abilities that equip them for the role. More progressive nurses were able to do this, but some nurses aligned with an 'old-fashioned' identity found it difficult to

accept that they needed to demonstrate how they had engaged with nursing research in order to be considered for promotion. Divisions between nurses arose between those who valued the number of years of registration as a nurse above contemporary knowledge gained through engagement with research, and those nurses who recognised the crucial importance of nursing research and evidence-based practice to the profession and patient care.

- The strategy of some nurses to restrict their engagement with research undermined their nursing colleagues who did want to undertake research and who wanted to pursue evidence-based practice. Their cynicism also negatively affected the staff morale and contributed to horizontal violence.
- When renewing their annual 'licence to practice', nurses must sign a statement that they meet the standards required of them, consistent with the relevant legislation. Nurses who rejected nursing research as integral to their role were, indeed, failing to fulfil all the regulatory requirements of their registering authorities. Similarly, a rejection of nursing research as integral to their roles is a rejection of the authority of the Australian Nursing Council, which incorporates research and evidence-based practice as part of the essential competencies for all registered nurses.
- The failure to comply with the requirements of professional nursing bodies undermines nursing's claim to be a profession, because professions are now evidence-based.
- The decision by some nurses to restrict their engagement with research also undermined their colleagues in other disciplines that respect research as a basis for practice.

Negative consequences to patient care included the following.

- Position statements issued by professional nursing bodies clearly state that the highest quality of patient requires that care to be based on the best available evidence. Thus, it could be argued, nurses who rejected nursing research as integral to their roles would be less capable of providing the highest standard of patient care possible.
- The premise of evidence-based practice is that the highest quality of patient care will only result from the judicious use of the best available evidence together with clinician judgement and a consideration of the needs of the individual patient. Those nurses who were less willing to follow the principles of evidence-based practice and who relied on somewhat ritualistic practices were unlikely to be able to demonstrate that their care was of the highest standard. Years of repetition do not necessarily translate to expertise, and nurses who believed that experience was as good as up-to-date knowledge were, in addition to jeopardising the standard of patient care, a divisive influence on the nursing culture.
- Those nurses who restricted their engagement with research faced the risk that their practice would not be able to effectively meet the patient's care needs. Patient care could be compromised as a consequence of the failure to implement evidence into practice. Those nurses who were unaware of research findings were less able to assertively and convincingly participate in deliberations with doctors and allied health personnel when planning patient care.

Some strategies had negative consequences for all these elements – the organisation, the nursing services, the individual nurse, and patient care.

- 'Stepping down' from a Clinical Nurse position affected the nursing culture in several negative ways. Those nurses were unhappy, and their moods 'depressed' their colleagues. They actively discouraged other nurses from applying for a promotion to the Clinical Nurse level, emphasising the difficulty and unreasonableness of the requirement to undertake research annually. Thus, progression up the career ladder was slowed for some nurses. Alternatively, other nurses elected to transfer to other clinical settings, which they perceived as having a more positive and encouraging culture.
- Each ward has an allocated proportion of nurses at each level, related to the number of patients and the degree of complexity of their care. Vacancies at the Clinical Nurse level were felt acutely by several wards during the time period of this study. There was a smaller pool of applicants if nurses were discouraged from applying for a Clinical Nurse position. Some ward managers were consequently pressured to fill a vacancy with an applicant who, perhaps, was not as capable as they would have liked, or they left the position vacant and nurses rotated through it in acting roles.
- The Clinical Nurse (Nursing Officer Two) role differed from the Registered Nurse (Nursing Officer One) role in more ways than the annual research requirements. However, by Clinical Nurses attempting to resolve their cognitive dissonance by 'stepping down', a gap in the depth of the nursing skill mix on the ward resulted because expertise was lost to the lower levels of appointment. This deficit could, in turn, negatively affect the quality of

patient care because there were fewer senior nurses to provide guidance and mentorship.

- The decision of some nurses to do the bare minimum required of them with respect to their research responsibilities, manifested, for example, by the lower standard of the disseminated reports, devalued research. That strategy did not set a positive example for junior staff, and some might question the nurses' commitment to providing high quality care and their willingness to actively shape the future of nursing.

Thus, while there were some positive consequences to the various strategies employed by nurses to manage their cognitive dissonance related to nursing research, there were many more negative consequences. The above summary indicates that these seriously undermine the efforts of the organisation to create and sustain a research culture, to put nursing care on an evidence-based footing, and to establish research awareness and competence among nurses. These problems do not serve the hospital well in its attempts to stand alongside others in which nurses actively pursue research, and they thus contribute to a continuing sense of relative inferiority. The lack of engagement with research also diminishes the authority of nursing in the eyes of other health professionals, and damages its development as a discipline. It is therefore imperative that the negative consequences of nurses' strategies, and their causes, be addressed, and a number of recommendations arising out of the study can now be made.

9.4 Recommendations arising out of the study

These recommendations arise from:

- The analysis of the data relating to the themes of Science and Identity
- The strategies that nurses used to manage the resultant tensions
- Consideration of the predictive aspects of cognitive dissonance theory, and
- An awareness of the literature relevant to the topic, as presented throughout the thesis.

In making these recommendations, there must be a compromise between the idealistic and the realistic, between the emancipatory intents of critical theory and everyday constraints of the clinical setting in which this study was undertaken. Overriding my thought processes was the desire to suggest recommendations that should 'work' in the clinical setting, and that would nurture a nursing research culture. Although this thesis is primarily an academic work, the recommendations are shaped by this assumption that there is little practical value in propositions that have minimal likelihood of resulting in action. Esoteric solutions will multiply existing hurdles faced with respect to the development of a nursing research culture, and nurse clinicians are more likely to dismiss them without consideration.

A significant recent event within the nursing services in relation to nursing research has also influenced the nature of the recommendations. Toward the end of 2007, the partnership between the health service district and the university was further strengthened by the appointment of a Clinical Chair, with the subsequent formalisation of a Nursing Research Unit. There are expectations that this new

position will help to advance clinical nursing research. It has taken several years to establish this position and provide essential material resources for the unit, with plans being initially discussed around the start of the fieldwork phase of the current study. The proposed recommendations reflect a consideration of the implications of these increased resources for nursing research, which should assist nurses to acquire confidence and competence with nursing research in a more planned and supported way.

I have also placed some limitations on the number of proposed recommendations. The thesis has clearly presented the diversity of viewpoints held by members of a non-homogenous workforce. The recommendations cannot address every individual nurse's experiences with research, and it has been necessary to propose the following key recommendations that are supported by the study's findings and that can be adopted across the nursing services.

Recommendation 1

The imposition of a mandatory requirement for nurses appointed at Nursing Officer Two level (Clinical Nurses) to conduct research should be reconsidered. This is necessary because compulsion fuels conflicting understandings of the role of the Clinical Nurse and the concept of 'professional'. The compulsion creates a sense of failure or guilt for those nurses who may be unable to conduct research, due to individual or organisational inhibiting factors. Individual nurses feel intimidated by the imposition, and destructive strategies are adopted by those who do not feel capable of fulfilling that obligation. At present, there is ample evidence that the

requirement is at odds with the level of resourcing, and the level of research education of many Clinical Nurses. The imposition exacerbates increasing workloads in a climate where it is difficult to recruit and retain nurses. If good clinicians choose to leave the organisation because of the impost, then nursing shortages worsen, and patient care is compromised. Other public hospitals, which also value research, choose to encourage nurses' engagement with research through other initiatives. Given that the incorporation of nursing research responsibilities into position descriptions took place some seven years ago, it is time that discussions about the appropriateness and value of the mandatory nature of these obligations are recommenced, with specific input from nurse clinicians. It may be appropriate to vary the requirements according to a ward's/institute's previous research involvement and achievements, rather than have a single 'rule' for all areas. A stated goal of the mandated research requirements was to provide the impetus for nurses to challenge their practices. Perhaps those areas that have progressed further toward developing a nursing research culture have 'moved on' from the need for mandatory requirements. If, however, these deliberations result in a continuation of the mandatory requirement, then the problems and consequences must be addressed, with consideration of the recommendations below.

Recommendation 2

A detailed analysis of the resources required for nurses to fulfil research accountabilities should be conducted, in relation to the current requirements as well as any projected changes to those requirements.

Many of the difficulties encountered by nurses in attempting to meet their research accountabilities, and the consequent dysfunctional strategies they adopted to reduce dissonance, are associated with inadequate resources to support nurses' research endeavours. Lack of resources currently fails to equip nurses with the skills, time and material required to conduct useful research. Despite their lack of research competence, many nurses did their best to undertake research, but the awareness that they were producing 'sub-standard' projects created its own problems and frustrations. Nurses were upset with their poorer performance, findings from the resultant research had limited usefulness to practice, and the reputation of nursing research was threatened. Many nurse clinicians have not undertaken formal research training; even those who have, need additional research education complemented by supported experience to apply research principles in the clinical practice arena. Resources need to be provided for initial and ongoing education programs, and for nurses to be released to attend the education sessions and apply what they learn to actual projects. Any analysis of the resources required will need to examine the availability of computers and nurses' computer literacy needs; physical resources needed to enable nurses to work on their projects in a quiet, dedicated area; and the funding required to backfill nurse clinicians while they are undertaking their research. Opportunities for secondments to the Nursing Research Unit, and partnerships with the university, together with the associated costs, should also be considered as part of the analysis of resources needed to support nurses to meet their professional accountabilities with respect to research. The provision of the appropriate type and amount of resources for nursing research will remove a contributor to the dissonance

that led nurses to adopt some of the dysfunctional strategies that they did, such as refusing to engage with research at all.

Recommendation 3

A detailed analysis of the resources required for nurses to undertake research beyond that which is mandated or expected should be conducted.

The nursing services clearly values the contribution of nursing research to practice, and the inclusion of nursing research accountabilities in all levels of position descriptions was a stepping stone along the way to the development of a nursing research culture. However, this link between research and practice can be strengthened by involvement in larger research projects. Thus, as the nursing research culture develops, it will be important for nursing services to be in a position to respond rapidly to research opportunities, such as those offered through funding grants from external bodies. To maximise this rapid response capacity, resources need to be provided for the monitoring of announcements of available research funds, and disseminating the information to the appropriate persons and units. Currently, there is no dedicated research office as is often provided in a university, to undertake the distribution of calls for grant applications, and the management of the submission of completed applications. Resources could be allocated to link with the university for information about funding offered through, for example, linkage grants, the National Health and Medical Research Council, and the Australian Research Council. Resources could also be allocated within the health service to monitor and coordinate funding opportunities provided by, for example, professional nursing bodies, registration authorities, unions, and companies associated with health products and

services. Such resources would address the current *ad hoc* approach to grant applications, create opportunities to mentor beginning researchers, as well as facilitate multidisciplinary research. In addition to alerting researchers to funding opportunities, research that is beyond that which is mandated could be facilitated by establishing: a register of active and willing nurse researchers, with information about their research skills, experience and qualifications, in readiness for inclusion in research proposals; guidelines and current costs for incorporation into budgets for proposed research; and a register of equipment available to researchers including computer hardware and software, video- and audio-recording devices. If resources were forthcoming, then the appointment of a research assistant who could ensure that literature reviews of nursing research priority topics were undertaken and kept up-to-date, would further facilitate a rapid response to research opportunities of importance to the nursing services. Readiness to be involved in funded and collaborative projects would also convey to the nurses who opted out of their mandated research, that nursing services are strongly committed to supporting research to inform practice, and are prepared to provide the necessary resources to realise this goal.

Recommendation 4

The health district should develop a framework for the systematic and efficient utilisation of research and for its implementation in the furtherance of evidence-based practice.

The study showed that nurses had different levels of understanding of 'evidence-based practice', and they had different levels of awareness of the resources available to assist them to utilise research to guide their practice. There are several models

relating to the utilisation of evidence in practice, available for clinicians to use. An analysis should be undertaken to determine the model best suited to the needs of the nursing services, to assist it to meet its strategic intents of encouraging evidence-based practice. Nurses who attend the various education sessions relating to evidence-based practice, complete the education modules available to them on-line, or undertake independent studies, will most likely be confused by the plethora of models. It would be more efficient, once the most appropriate model is identified, to invest resources to develop a framework within which nurses will be facilitated to use evidence in their daily practice. This framework would need to address the structures and processes for: locating current evidence of relevance to nurse clinicians, critiquing the vast amount of information and presenting the critique and summary in a format useful to the busy nurse clinician, and ensuring that such tools remain current. The framework should also incorporate means of evaluating the outcomes for patients from an increased utilisation of evidence in practice. The standing of nursing as a profession would be enhanced in the eyes of nurses and other health professionals, if a standardised and systematic way of delivering evidence-based patient care is introduced. The framework would need to consider the resources necessary, and include strategies to encourage collaborative work, rather than individuals working on their own. As such, existing resources should be utilised, including guidance from the Clinical Chair, and the incorporation of credible sources of systematic reviews from organisations such as Joanna Briggs International. There would need to be education, on an ongoing basis, about the framework once it is developed and disseminated. A structured approach to research utilisation would

also address many of the concerns voiced by the nurses in the study and minimise the need for many of the dysfunctional dissonance-reduction strategies.

Recommendation 5

The health district should develop a research policy and research strategy, so that research efforts are focused on key issues.

The study showed that there was significant confusion surrounding research and a lack of any systematic approach. There is an important need to develop a structured approach to nursing research, with clear articulation of research goals, would result in more meaningful research over time, and research that would help to achieve research priorities already established by, for example, the health department and federal advisory bodies. The policy would include reference to nurses' accountabilities with respect to research, following a reconsideration of the currently mandated requirements, and technical information including the principles of research. Such a strategy will also need to acknowledge the range of methodologies and research methods that are appropriate to nursing research, not limited to a positivistic scientific approach. The resources available, including the guidance available through the recently-expanded Nursing Research Unit and the expertise of the Clinical Chair, will be included in the strategy. It is likely that this guidance will build upon the existing expertise and enthusiasm of those nurses who have undertaken research, as well as extending existing mentorship and preceptorship opportunities. The implications of a suggestion for nurses to be seconded short-term to the Research Unit for a specific purpose also need to be investigated, and such an initiative could be part of the nursing research strategy. The research strategy also

needs to address the resources and processes for disseminating the findings of research projects across the health service district, and for publicising the research activities underway at any given time. This information could be disseminated via a range of means, including a nursing research newsletter, e-mail, postings on the Webpage. The adoption of a collaborative approach between the university and the health district's Nursing Research Unit would help to engender positive attitudes toward nursing research in new graduate nurses. The research strategy will also need to include other ways of developing positive attitudes, such as the sharing of research success stories, and positive stories about research that have changed practice and improved the care of patients. The research strategy will need to include the resources required for continued research training about, for example, methodologies, methods, computers, data management, systematic literature reviews, and ethical aspects of research. Once nurses become fully involved with research, and feel supported, they will likely see endless opportunities in this career pathway, and view research as lifelong learning.

Recommendation 6

Appropriate means to recognise and reward nurses who engage with research should be identified and enacted.

The study showed that there was often a lack of awareness among nurses of the research underway or completed by their colleagues on their own wards; this was a source of considerable discontent among those nurses who had endeavoured to meet their research responsibilities. Recognition and reward processes will, no doubt, be part of a formal research strategy, but it is important that those nurses who develop

skills with research and who are active researchers are recognised in ways that are meaningful to them. Given the earlier discussion of different nursing identities, there will need to be a range of recognition strategies, which would build upon those processes that have already been developed in relation to the Clinical Nurses who complete their mandated research projects. As a beginning, perhaps a badge that indicates that nurses are part of a select group of professionals could be presented – there are badges associated with other education courses, and nurses wear these, knowing that they indicate a level of training and expertise. This would help to lessen the isolation of nurses who are actively involved with research while identifying that they are 'special'. Other tangible recognition processes could include equitable support to attend conferences, to encourage nurses in their research endeavours. As discussed in Recommendation 3, a register of willing and active nurse researchers could be established; these nurses would form the nucleus of a 'nursing research special interest group', and meet regularly throughout the year, to discuss and share their research work and interests. Those nurses who successfully complete research projects could be encouraged to apply for internal funding, building upon a recent initiative that has been introduced associated with the mandated projects. A formal reward and recognition process would assist research-active nurses to develop their own career paths, and reduce feelings that their research efforts have been of restricted value.

9.5 Chapter summary

This chapter used a well-recognised theory, cognitive dissonance theory, to analyse how the Children's Ward nurses dealt with the tensions associated with the use and

conduct of research, and suggested that these strategies were likely also to be used by nurses across the hospital. Some of the strategies that nurses used to manage the resultant dissonance had positive effects on the organisation, nursing services, nurses, the nursing profession, and the patients. Unfortunately, however, the strategies with negative effects were more numerous. Notwithstanding that research is important to professional nursing and to the outcomes of patient care, the study reinforces that research is not easy and not everyone can do research, and any institutional practices that devalue research need to be eliminated. Thus, several recommendations were proposed, in an attempt to provide greater logic and clarity to what the hospital is trying to achieve with respect to raising the significance and profile of research. Although it is recognised that the obligation for nurses at a certain level to undertake annual research was introduced with the best of intentions, it is time to give serious consideration to whether the gains outweigh the losses incurred by this requirement. It is suggested that rational debate will identify better strategies to build upon the nursing research culture that is developing. The next chapter of this thesis, Chapter Ten, concludes this study.

Chapter 10: Conclusion

10.1 Chapter introduction

The purpose of this chapter is to attempt to bring together the preceding chapters and provide some closure to the thesis. Following an overview of the thesis, the major recommendations arising out of the study are restated. The strengths and limitations of the study are identified, and the chapter concludes, as the thesis started, with a personal reflection on the journey.

10.2 Overview of the thesis

The thesis began with some introductory reflections about my personal and professional background, and an explanation of why I was particularly interested in exploring the development of a nursing research culture. This was linked to my current work, that of a Nurse Manager-Research in a health service district in regional Australia, and some observations that I had made at the early stages in that role.

I recognised that what was being demanded of nurses with respect to their engagement with research was somewhat unique, at least in this part of the country. Although research has long been considered a part of a professional nurse's role as described in Chapter One, at a local level we had expected that nurses would be willing to take on the challenge of nursing research and be able to fulfil specific responsibilities as outlined in their position descriptions. In many ways, we dived

straight into the deep ocean, without ensuring that all the safety procedures were in place, presuming that everyone was a competent swimmer in all conditions.

Chapter Two presented an overview of research pertaining to nurse clinicians' attitudes to research, implementation of research findings into practice, and conducting research in their work areas. This literature review clarified that there are many commonalities in the facilitative and inhibiting factors that influence the nursing research culture, which are not restricted to nurses in one country or in one type of setting. The idea was crystallising that perhaps the demands we were placing upon our nurse clinicians were, to some extent, unreasonable or not rational. Although the intentions may have been laudable, the reasons behind the decisions that nursing services had made about the research responsibilities for the various levels of nurse clinicians had not been openly debated.

In order to investigate the topic in depth, in a way that has not been done previously, it was necessary to focus on a particular group of nurses, and the nurses of the Children's Ward participated in this study. Reasons for the selection of a methodology based on critical theory were provided in Chapter Three, along with a detailed description of the critical qualitative methodology selected. This methodology has not, to my knowledge, been followed as faithfully within a nursing research study, although other researchers have adapted the methodology, developed by the educational researcher, Carspecken, to topics within the health arena. I endeavoured to remain as faithful to the methodology as possible, and the application of Carspecken's critical ethnography and any deviations from his approach

necessitated by some differences between education and hospital locations were described in Chapter Four.

The Children's Ward was described, much like it might be in any ethnography, in Chapter Five. Attempts were made to identify historical and contextual factors that have moulded the environment of the ward. I enjoyed visiting Children's Ward, have a respect for the resilience of the nurses who participated in the study, and a greater understanding and appreciation of the conditions with which nurses have to be familiar, and their ability to cope with demanding and complex family situations.

In a critical ethnography, however, it is not adequate to merely describe the environment, and Chapters Six, Seven and Eight discussed two dominant discourses, *Science* and *Identity*, that were evident in the data. Data that illustrated a positive view of science was presented, with literature that supported this dominant view, which is held by the wider society in which we live. To a lesser degree, there was data that challenged this traditional view of science and, together with the associated literature, offered some cautionary words about accepting the dominant discourse. Similarly, there was data that illustrated the dominant modernist identity and data that illustrated that some nurses held alternative viewpoints about the nature of their professional identity. It was important that arguments counter to the dominant discourses were presented, because these viewpoints are less frequently articulated, and people who challenge the traditional are often not heard.

Although I used an organising framework to present these supportive and contra-arguments, there is a considerable interlinking between the concepts. The professional identity of a nurse is inextricably linked with science and I am aware that my organising framework was somewhat arbitrary. The organising framework reflected decisions made that meant greater emphasis was placed upon some data and, necessarily, other interpretations were limited or excluded. The framework was, however, an attempt to impose some order on the data. This interlinking between the discourses was evident in the data, which related to how the nurses managed the tensions arising from different beliefs. Cognitive dissonance theory was selected as an appropriate theoretical model to explain how and why nurses endeavoured to resolve those tensions. Self-esteem and identity are also linked, and the nurses employed various strategies to minimise dissonance and maximise consonance, thus preserving their sense of self.

The recommendations, offered in Chapter Nine, reflect a balance between what might be fanciful and what is achievable. They are linked to my initial reasons for undertaking the study, the contextual background and research evidence related to developing a nursing research culture and, obviously, to the findings of the ethnography conducted in the Children's Ward and the analysis of the dominant themes. The next session restates those recommendations.

10.3 Recommendations

Several recommendations were proposed in the preceding chapter, and they are repeated below, for emphasis. It is anticipated, because of their continued support of

nursing research, that these recommendations will be considered by the nursing executive.

- Recommendation 1: The imposition of a mandatory requirement for nurses appointed at Nursing Officer Two level (Clinical Nurses) to conduct research should be reconsidered.

- Recommendation 2: A detailed analysis of the resources required for nurses to fulfil research accountabilities should be conducted, in relation to the current requirements as well as any projected changes to those requirements.

- Recommendation 3: A detailed analysis of the resources required for nurses to undertake research beyond that which is mandated or expected should be conducted.

- Recommendation 4: The health district should develop a framework for the systematic and efficient utilisation of research and for its implementation in the furtherance of evidence-based practice.

- Recommendation 5: The health district should develop a research policy and research strategy, so that research efforts are focused on key issues.

- Recommendation 6: Appropriate means to recognise and reward nurses who engage with research should be identified and enacted.

10.4 Strengths of the study

There were several strengths of the study, including:

- It is an in-depth examination of the issues surrounding nursing research, from the perspectives of the nurse clinicians, in one hospital ward. As discussed in Chapter Two, I could not locate earlier examples of research that had undertaken such an endeavour, with pre-existing studies almost without exception restricted to using self-report questionnaires.
- A rigorous methodology was selected to explore the research questions from a critical theory perspective. In some small way, I hope that the concerns of a group of people that is all-too-often not consulted, have been voiced and will be heard.
- By giving voice to the nurses from a particular ward, nursing executive may better understand why research accountabilities have been problematic to enact. I anticipate that the nursing services will thoughtfully consider the recommendations, for incorporation into future strategic plans. This is a reflection of the goodwill on the part of nursing administration and their support of the project.
- The recommendations proposed are achievable within the given constraints facing the hospital and health service. This was an attempt to ensure that there were practical, feasible outcomes of the research, and to enhance the relevance of the study to nurse clinicians.
- The data reflected themes that are dominant in the wider society, the nursing culture representing a microcosm of that broader culture. It was possible to

link the examination of the micro-culture of the Children's Ward to an examination of the macro-culture.

- The study successfully demonstrated that Carspecken's critical qualitative methodology can be used in a health context, somewhat removed from its usual use within an educational context. Minimal adjustments to the design were made as the study progressed, which is entirely consistent with the methodology.
- Those ward nurses who participated in the study have subsequently confirmed their interest in being part of other large research projects. This was an unintended consequence, but perhaps it is 'living proof' that research is less threatening when one is actively involved, and it is valued by nurse clinicians when the relevance to their practice is apparent.

10.5 Limitations of the study

Notwithstanding the strengths, there are always limitations to any study, whether in relation to the topic, methodology, method, conduct, or findings; and the major limitations of this study are listed below.

- An intent of critical qualitative research is that the participants will reflect on the issues being researched and challenge the status quo. Although I suspect that some participants did change through their involvement in the study, I am unable to claim this as an outcome of the study.
- The study focused on the nursing research culture in one hospital ward, which is not likely to be the same as any other ward, even in the same hospital. Thus, the research is not able to be generalised; nor is it intended that this be

done. However, perhaps people who read this thesis may identify some commonalities with their own local environment, and ponder if any of the concepts are worthy of investigation in their own situations.

- The choice of two dominant themes from the data was arbitrary; other themes were also prevalent and another researcher faced with the same detail may have made different choices.

10.6 Future research

Although this research has provided answers to my initial questions, it has also suggested several areas for further research.

- Overall, future research should evaluate the outcomes of the actions taken to address the recommendations suggested by this study.
- As a precursor to making changes to the mandated requirement to undertake research, it is suggested that a formal assessment of the current Clinical Nurse program, with input from nurses at all levels and across the organisation, be undertaken.
- Because each area has, over time, negotiated different interpretations of the research requirements, the effectiveness of those strategies in bringing about changes to patient care and nurses' research competency, should be measured prior to and after modifying the research requirements.
- As a more structured and supported approach to nursing research is introduced across the expanded health service district, further research should proactively assess inhibitory and facilitative factors to nurse clinicians

becoming involved with research, to enabled continued support and development of a nursing research culture.

- An assessment of the research skills and qualifications of nurses across the health service district should be undertaken, to inform the most appropriate strategies to further encourage engagement with nursing research tailored to the specific culture of different wards/areas.
- An investigation into the relative contribution, relationships and limits of evidence and clinical judgement to nursing practice is suggested, to address the issues raised very strongly by nurses who claimed that experience and intuition were more important than research to their clinical activities.

10.7 Final reflection

This thesis began with a personal reflection and I will conclude it in a similar way. This is not intended to be self-indulgent; such a reflection is consistent with the selected methodology. The doctoral research journey has been personally satisfying. Nurses in the Children's Ward, nursing and university colleagues, and my Supervisors have frequently asked me over the years, "How is your research going?" My acknowledged intention to explore many by-ways along my journey often meant that my response to this question was vague or guarded. My line manager has commented that these experiences have meant that I am less content to sit back and observe interactions, and more confident to speak out and challenge some taken-for-granted assumptions of my colleagues. However, this criticality can be viewed as threatening to the comfort levels of some of my work contacts, and it remains to be seen how these effects are managed.

The adoption of a critical stance has not been restricted to the study topic; I have become more 'critical' in my thinking and work activities through the process. For example I find myself considering whose voices are and are not being heard within the context of committee meetings or when perusing documents in the course of my work role. I contemplate what hegemonic processes are being maintained, in various familiar situations. Others have remarked that I am more confident, and apt to question the status quo. I recognise that life is not simple, and that there are reasons why nurse clinicians found their research responsibilities difficult, and that sometimes their responses were, perhaps, a resistance to hegemonic processes.

When I began this study, I was extremely supportive of the mandated research requirements, perhaps because of the accountabilities within my own position description, and a wish to be a 'good' employee. This study has provided a legitimated avenue to elicit 'minority' (that is, least often expressed) viewpoints. Thus, I have jumped from one side of the barrier, to straddle the tightrope, while endeavouring to provide a balanced argument. I have realised that it is counterproductive to have blanket, 'one-size-fits-all' statements, because many nurses will reject such rules. A more transparent and informed approach to deliberations, in which the voices of those who are often silent and of those who hold more privileged positions, will be more supportive of the organisation's goal to further develop a nursing research culture.

I have contemplated why my line manager was so supportive of this study and interested in the changes of direction as it progressed. No doubt, my credibility as a

nurse researcher within the health service district will be enhanced by the possession of a PhD. Nursing services will, it is anticipated, be pleased that another nurse has achieved at this level, and this supports the opportunities afforded to nurses to pursue research in this regional location. It will require courage, however, for the Nursing Executive to accept the challenges to the way they have elected to promote nursing research that this thesis argues.

Of great concern to me throughout the study was that time does not stand still. I expended considerable effort tracking changes taking place in my work role, across the nursing service and health service district, with the phases of the critical ethnography and my personal reflections as the study progressed. A 'synoptic diary' assisted me establish some clarity in this endeavour.

This study used a critical theory approach and one final question remains to be addressed in this conclusion: Whose interests are being served by the expectation that nurse clinicians are actively involved with research, and whose interests will be served by the findings of this study? Nursing research is an articulated expectation of nurses, whatever their sphere of practice; and it is assumed that everyone will benefit from nurses' increased research competence. These benefits will occur to all, if certain conditions are met. Firstly, the individual nurse must possess the knowledge and skills to undertake and utilise research appropriate to their role, and resources must be provided to enable them to develop their research expertise. However, patient care will always be the priority of clinicians, and it is unreasonable to expect that individual nurses should feel torn between the responsibilities of

practice and research, which at times seemed unrelated and irreconcilable to the nurses in the study. Nurses will acquire other abilities, such as negotiation, project management and writing skills, through their involvement in research.

Secondly, patients will benefit from an organisation committed to ensuring that their care is based upon the best available evidence, and an organisation that is willing and able to commit resources to addressing areas of clinical research of relevance to the organisation. Thirdly, the nursing services and organisation will benefit by nurses embracing research. Many nurses who have undertaken a research project have been promoted, and are thus in a better position to have greater influence over various aspects of hospital life, such as the way that nursing care is managed, and patient care delivery processes. Nurse clinicians who are actively involved with research will be positive role models for less-experienced nurses, and will be in a direct position to implement research findings into practice. Lastly, conditions that facilitate nurses' engagement with nursing research will benefit the nursing profession. At a local level, nursing will gain respect from other health professions that have a commitment to a research base. Nurses will be able to participate in more reasoned discussions with other health professionals, about research and patient care. While a failure to do research fails to do justice to nursing, it is crucial that nursing research is done by nurses who are adequately resourced and equipped for the endeavour, so that patient care is not compromised.

My descriptions in this ethnography are as I have constructed from a snapshot in time, as seen through my eyes, and I have endeavoured to provide a balanced

argument about the progress of one ward in this hospital toward a nursing research culture. The reality that my reflections have been shaped by my experiences, and by what I did not experience, lingered in the background throughout the study. My greatest hope, as I conclude this thesis, is that the interests of the nurses on the Children's Ward have been fairly represented, and that they will be encouraged to continue their involvement with nursing research.

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Appendices

Appendix A: Summary of the top five items ranked as a moderate to great barrier to research utilisation, by different samples of nurses

Researcher and Year	Funk et al. 1991	Dunn et al. 1997	Kajermo et al. 1998	Kajermo et al. 2000	Kajermo et al. 2000	Kajermo et al. 2000	Retsas 2000	Oranta et al. 2000	McCleary & Brown 2003
Country	USA	UK	Sweden	Sweden	Sweden	Sweden	Australia	Finland	Canada
Respondents	924 nurse clinicians	316 registered nurses	237 nurse clinicians	37 nurse teachers	166 nursing students	33 nurse administrators	400 registered nurses	253 registered nurses	176 paediatric nurses
Item (original number) and factor (P= presentation; N= nursing; R= research; S= setting)									
1. Research reports/articles are not available (P)			1	=4	3	=4			
2. Implications for practice are not made clear (P)				=2		=1		5	
3. Statistical analyses are not understandable (P)		2					4	3	3
5. The nurse is unaware of the research (N)	3								
6. The facilities are inadequate for implementation (S)			2	=4	2	=4	3		
7. The nurse does not have time to read research (S)			4	=2	5		5		1
12. The relevant literature is not compiled in one place (P)		5							2
13. The nurse does not feel she/he has enough authority to change patient care procedures (S)	1				4		2		4
14. The nurse feels that the results are not generalizable to own setting (S)						3			
15. The nurse is isolated from knowledgeable colleagues with whom to discuss research (N)			3	1	1	=1			
18. Physicians will not co-operate with implementation (S)	4	3						2	
19. Administration will not allow implementation (S)	5								
28. The nurse does not feel capable of evaluating the quality of the research (N)		4							
29. There is insufficient time on the job to implement new ideas (S)	2	1	5				1	4	5
Additional item: The research is published in a foreign language				=4		=4		1	

Appendix B: Staff questionnaire

It was necessary to slightly modify the formatting of the questionnaire to comply with requirements pertaining to the layout of the thesis.

(University and Health Service District logos were included at the top of this page)

PROJECT TITLE: ***Developing a nursing research culture: What are the critical success factors?***
(Note: this was the original working title of the study)

PRINCIPAL INVESTIGATOR *Mrs Wendy Smyth*

CONTACT DETAILS

Wendy Smyth

Contact details provided here

This questionnaire forms part of the data collection for my postgraduate studies within the area of nursing research

I understand that you are very busy, but I would appreciate you taking a few minutes of your time to complete it.

All responses will be treated confidentially. This questionnaire is anonymous. However, if you wish to include your name, this would also be very much appreciated.

Please complete both sides of the form and then return the completed questionnaire to the box provided. Thank you very much for your assistance and involvement.

DEMOGRAPHIC DATA

What is the highest level of formal education you have completed?

Year 12	Certificate		Diploma
Bachelor degree	Graduate certificate/ diploma		
Masters	Higher		…….

Gender: Female Male

Age:
25 years or younger 26-35 years 36-50 years Older than 50 years

Professional group:
Nursing Medicine Allied Health

Years of experience in current profession:
Less than 5 years 5 to 10 years > 10 years

Name: *(optional)* _____

Please turn over and complete the other side

What has been <u>your involvement with research</u> to date? (Tick all that apply)

	Tick if yes	Please give further information about your answer; examples
I studied one or more research subjects at University level		e.g. research design; statistics
I have done an "action research" project		Title:
I have written/co-written a research submission to an institutional Ethics Committee		Details:
I have collected data for: - Nurse-initiated research		
- Medicine-initiated research		
- Other research		
I have written/co-written a research-based article for publication; or presentation at a conference		Further details:
Other involvement in nursing research		In what way/s?

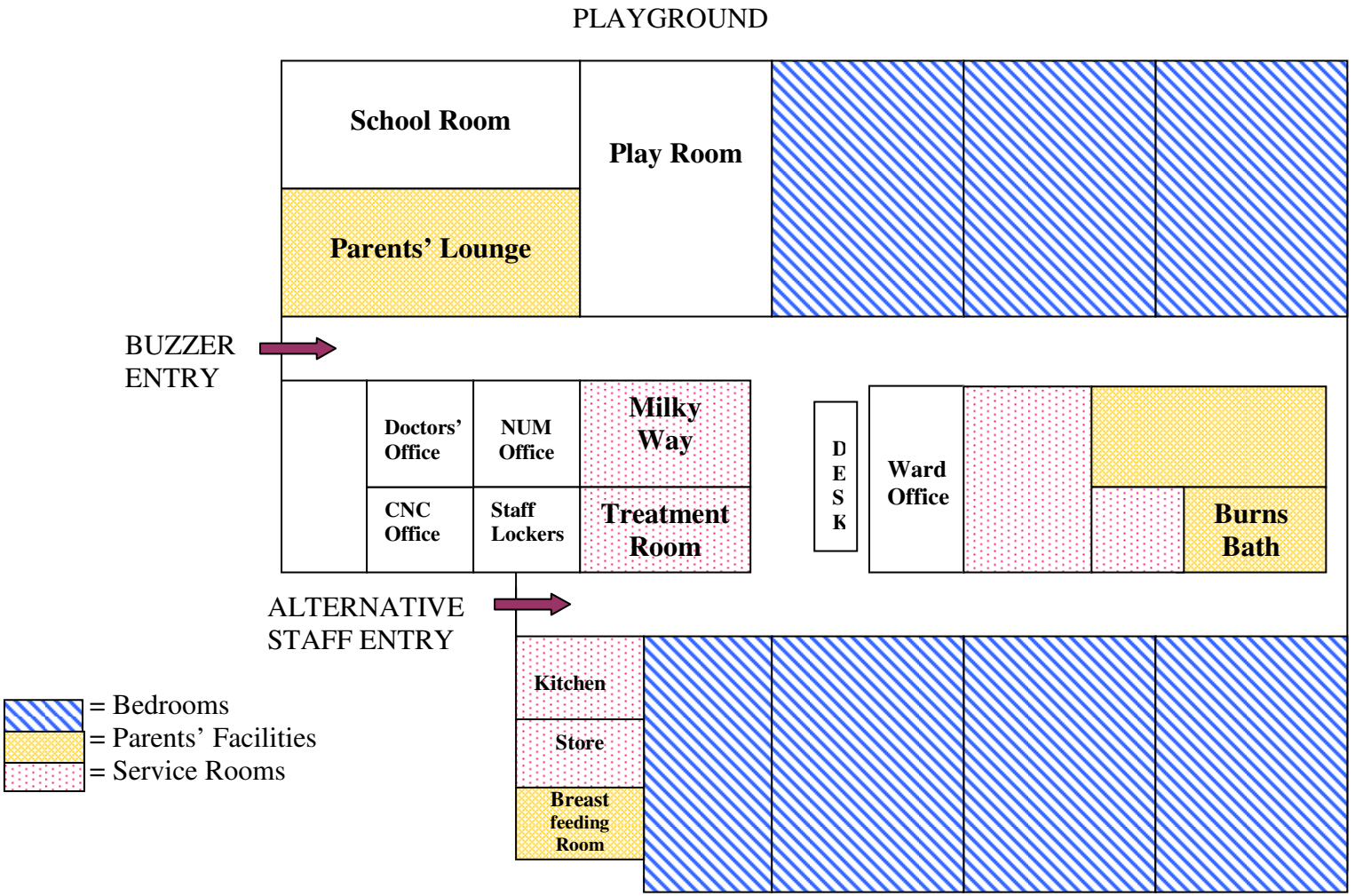
Recently, during the last four months or so, have you accessed "evidence", literature, research, through any of the following?

	No	Yes	If yes, did you find what you were looking for?
CINAHL, Medline databases			
Joanna Briggs site			
ARCHI network			
Cochrane Collaboration			
Internet			
Other: _____			

Do you regularly read professional journals? Yes No
If yes, which one/s?
_____
_____
_____

Thank you once again for your assistance.

Appendix C: Schematic drawing of the Children's Ward


PLAYGROUND
School Room
Play Room
Parents' Lounge
BUZZER
ENTRY
Doctors' Office
NUM Office
Milky Way
CNC Office
Staff Lockers
Treatment Room
D E S K
Ward Office
Burns Bath
ALTERNATIVE
STAFF ENTRY
Kitchen
Store
Breast feeding Room
= Bedrooms
= Parents' Facilities
= Service Rooms