Theatre Wear Must be Worn Beyond this Point

A hermeneutic ethnographic exploration of operating room nursing

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Table of Contents

Appendices

References   **301**

Figures

Tables

Illustrations

Abstract

Operating room nursing is facing a watershed. Its very existence is threatened and the demand for explicit and exacting justification for a nursing presence in theatre is acute. The generation of substantive theoretical insights into the world of operating room nurses clarifies the nursing contribution to the function of the operating room. Nursing knowledge, the nursing voice and nursing acts are central to this ethnographic account.

A hermeneutic ethnographic research methodology was employed to achieve this purpose. Classic ethnographic methods were used to conduct the fieldwork. These were participant observation, field notes, interviews and the maintenance of a combined field and reflective journal. Data analysis followed standard ethnographic process and drew upon the hermeneutic metaphors of the hermeneutic circle, fusion of horizons, prejudice and play.

The ethnographic account that is the product of the study is entitled *Theatre Wear Must be Worn Beyond this Point*. It is constructed through the development of six main themes that have been likened to the layers opened during a surgical operation.

In *Operating Room Nurses and Space* the use of physical spaces within the ORS is considered. The coexisting and conflicting ways of understanding time in the ORS is presented in *Operating Room Nurses and Time* and objects of importance to the nurses within the culture are introduced in *Operating Room Nurses and Artefacts*. The tension between 'technical' and 'caring' work is addressed in *Operating Room Nurses and Patients,* as are the concepts of 'normal terror' and 'advocacy'. The invisible nature of the nurses' work in the operating room is also argued. The cultural rhetoric and actuality of teamwork are the concern of the remaining two layers of the ethnography. Team membership, rites-of passage and ways of relating are discussed in way in *Operating Room Nurses and the Permanent Team* and *Operating Room Nurses and the Multidisciplinary Team*.

Discussion of two important theoretical constructs, emotional labour and routine and ritual draw the ethnography to closure. The thesis is then concluded with an evaluation of the research process and its product. The significance and limitations of the study are addressed and recommendations are made.

Declaration

I certify that this thesis contains no material that has been submitted for any other degree in any tertiary institution.

Any material previously published or help received in the preparation of this thesis have all been acknowledged in the body of the work.

Rosalind M. Bull

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Introduction

Introduction

The evolution of operating room nursing sets it apart from other fields of practice within the profession. As one of the longest established specialties in nursing practice (McGee, 1991) the development of operating room nursing has been, and still is, inextricably linked to the development of technology. Established in the late 1800s in response to the re-location of surgical procedures to specialised rooms, the role of the original operating room nurses centred upon care of the instruments and the theatre (McGarvey, Chambers & Boore 2000). In 1889 at the Johns Hopkins University, operating room nursing was identified as a specialised area of nursing work (Berry & Langridge 2000). In the 1960s the centrality of the patient to their role was formally established (Gruendemann & Fernsebner 1995a). The ability to manage disease and illness through the development of increasingly sophisticated surgical procedures has continued to escalate and operating room nurses are compelled to match this pace of change. They reshape their practices to meet the demands wrought by new instrumentation, new anaesthetic and surgical procedures and the impact that these have on their patients.

Known variously as theatre nurses, operating room (OR) nurses and perioperative nurses the members of this specialty nursing group contend that their presence in theatre has not only helped to ensure safety, sterility and efficiency but has contributed an ethic of holistic care that has helped to ameliorate the highly technical focus of the operating department. Despite this belief the role of nurses in the operating room is under threat. The demand for cheaper alternatives to registered nurses (RNs) in this area and a decline in the number of nurses wishing to pursue a career in the operating room have combined to present a formidable challenge. OR nurses have experienced difficulty establishing a convincing argument for the preservation of a nursing presence in theatre. The lack of clarity on this issue has jeopardised their position in the current debate surrounding the roles of staff in the

1

operating room, as the unique contribution that nurses make there remains anathema to people outside the profession.

Traditionally it would appear that OR nurses have not been able to act effectively when defending their own territory. Rather than demonstrating the complex nature of the nursing care they undertake, they have tended to assume a default position, arguing on the basis of a simplified list of skills. This oversimplification of their role has left nurses vulnerable to challenges from many people including those who are making policy decisions that will directly and indirectly affect OR nurses. This is not an uncommon problem as Barley writes '... millions of people go to work each day to do things that almost no-one but themselves understands but which large numbers of people believe they know enough about to set policy, offer advice, or redesign' (foreword in Orr 1996). The difficulty OR nurses experience in finding a rational defense for retaining their place in the theatre means that they stand to lose what is currently considered to be nursing territory. That is, nurses will no longer have a principal role in the care of the perioperative patient. The impact of this can already be seen in operating departments. Anaesthetic technicians are already a feature of the Australian operating theatre displacing anaesthetic nurses. The role of surgeon's assistant (in place of scrub/instrument nurse) is also being embraced internationally. Although the nursing profession has expended considerable time and effort establishing its unique role in health care, the value of nurses in the operating room is still questioned from both within and outside the nursing profession. In her address to the graduands of the 1991 Post Basic Operating Theatre Course, Royal Prince Alfred Hospital, Mary Chiarella stated:

> What is the role of the RN in the operating room? I have heard several types of answers to this, according to the source – from those concerned solely with funding – the RN in the OR is purely a technician, a passer of instruments, a trained monkey, therefore he/she can be replaced by technicians or enrolled nurses. From doctors I have heard that the RN is a first assistant to the doctor, able, as a result of their previous nursing education to work as part of the surgical team and be a junior surgeon, a surgeon's assistant; and from RNs I have heard that they are neither of these things, that they are there in the OR to provide nursing care to the patient at the bedside [which happens at this time to be the operating table] (reproduced in ACORN Journal 1991 p.15).

Although she gave this speech a decade ago Chiarella neatly summarises some of the key issues facing operating room nurses today. While questions about the role remain, it is likely that this unique area of nursing and the nurses who work within it must bear the strain of constant scrutiny and role erosion. A better understanding of the work that nurses currently do in the OR is a useful beginning for anyone who wishes to enter this debate. Influencing policy decisions relating to such key issues as scope of OR nursing and place of practice is contingent upon the development of robust arguments. These arguments will be stronger if premised upon the findings of a research study that describes and interprets contemporary operating room nursing.

Purpose of the study

The study's purpose was to generate an authentic ethnographic account of the day-to-day working lives of operating room nurses that could contribute to the ways of understanding nursing in the operating room. This was achieved through observation, conversations and being with nurses as they worked in the operating room. Its further purpose was to make this account accessible to people with little or no experience of the operating room. It sought to achieve this through the use of a number of common ethnographic authorial devices including metaphor, synecdoche and metonymy, vivid but concrete description and theoretically supported interpretation. The ethnographic account that is the product of this study is concerned principally with the nurses working within the operating room and its adjacent areas. Thus observation of nurses as they worked within the waiting and recovery rooms was beyond the scope of this study.

Aims of the study

The aims of the study were to:

- generate substantive theoretical insights into the world of operating room nursing and to do so from a cultural perspective;
- address the lack of 'nursing voice' apparent in the related literature surrounding operating rooms and operating room nursing by rendering the nurses' stories of their practice and actions visible in the ethnographic account;

- enable operating room nurses to gain a fresh perspective on their work, so that they have the opportunity to (i) identify and develop facets of their work that they perceive to be nursing and (ii) to reassess priorities and responsibilities;

- produce an ethnographic account that, by reflecting operating room nurses' understanding of their world, could increase their awareness of the ways in which the culture determines their behaviour and conversely how they contribute to making and sustaining that culture;

- produce a rich account of contemporary operating room nursing that will serve as a historical record, and

- produce an account that would render the nurses' contribution in the operating room visible and understandable to people not working in the area.

Significance of the Study

The ongoing existence of nursing in the operating room is threatened on a number of levels. Currently nurses appear unable to give explicit and exacting justification for their presence in theatre. Operating room technicians, surgeons' assistants and anaesthetic technicians are already moving into the territory, sanctioned by administration in light of fiscal restraints and nursing shortages. The average age of operating room nurses in Australia is rising and limited exposure to the theatre during pre-registration preparation is contributing to a downturn of nurses applying for theatre positions following graduation. Lack of role clarity coupled with unflattering stereotypes has contributed further to the current crisis in the operating room.

By generating substantive theoretical insights into the world of operating room nurses the study helps to clarify what it is that nurses contribute to the function of the operating department with particular emphasis on the operating rooms. By doing so the study contributes to the available information upon which important decisions about these nurses and their work-world are made. The voices and actions of the nurses are central to the ethnographic account. The emphasis placed upon nursing knowledge, the nursing voice and nursing acts contributes to the development of strong, nurse-generated arguments that may have direct impact upon the direction that nursing takes in the OR.

In terms of patient care and professional development the production of the ethnographic account provides a text upon which operating room nurses can revisit their words and practices and reflect upon their patient care, their roles and the way they act in and understand their work-world.

Finally the ethnographic account is written in language that is readily accessible to people outside the operating room and thereby provides, for these outsiders, an insight into the contribution of nurses in the hidden world of the operating room. It is an attempt to address the problem identified by Jane Salvage who wrote '… there is a huge gap between the ideas about who nurses are, what they do and where they do it, and the reality' (Salvage 1985 p.48). The account is one way of redressing the popular image of the operating room. It is a response to news headlines such as 'Surgeons worked through the night to save life and limb'. It is an acknowledgment that working right beside those surgeons were the nurses. It is a recognition that before the surgeons arrived, the nurses were there already preparing for the operation and after the surgeons had left, those same nurses were there clearing away and setting up for the next patient.

Questions guiding the study

This study was guided by a series of questions that reflected the ethnographic intent of the study. These guiding questions were subsumed within the overarching research question that reflected the principal concern of the study. Thus the research question was:

> What is the contribution of operating room nurses in terms of the overall functioning of the operating room?

The guiding questions were:

- What do operating room nurses do in their day-to-day work lives?
- When do operating room nurses do what they do?
- How do operating room nurses do what they do?
- Who do they do it with?
- Why do they do it? And,
- How can this be understood in terms of the culture they work within?

Background to the study

Operating room nursing in Tasmania is facing a watershed. Along with the rest of Australia Tasmania is experiencing a critical shortage of nurses, and theatres across the state are feeling the impact of dwindling nursing numbers. In their final report the Department of Health Human Services (DHHS) steering committee of the Tasmanian Nurse Workforce Planning project noted that '... the nursing shortage is becoming particularly acute in specialist areas such as operating theatres ...' (DHHS 2001a p.1). Although some theatres including the Launceston General, Royal Hobart and North-West Regional Hospitals are establishing well-supported orientation programs to improve recruitment and retention of new graduates this has met with only limited success. At the Community Affairs References Committee: Nursing Inquiry Senate Hearing held in Hobart on 15 March 2002 (Commonwealth of Australia 2002) representatives from the Tasmanian Operating Room Nurses (TORN) Group stated that many of the new graduates undertaking a six month rotation through theatre chose to return to the wards. They noted that the majority of operating room nurses would retire within the next 10 years and that they were experiencing difficulty keeping younger nurses in the OR. The ongoing crisis in operating room nursing provides the backdrop for this study. It is a situation that has arisen in response to social, political and historical pressures, some of which are specific to Tasmania, most of which are not. These pressures and their impact on operating room nursing in Tasmania will be explored in the study background. This exploration is preceded by a general introduction to Tasmania and a profile of the state's health care system.

Background to Tasmania

The island of Tasmania is Australia's smallest state. Renown for its beautiful wilderness areas, historical sites, its clean air and water, Tasmania is a popular tourist destination. Hobart, the state's only city, has grown from origins as a shipbuilding centre to becoming the state's business and administrative capital. It is the only part of Tasmania that is considered to be metropolitan under the Rural, Remote, Metropolitan Areas (RRMA) classification system, all other areas considered to be rural or remote (AIHW 2002). It houses both chambers of the state parliament, the nineteen-member Legislative Council and the thirty-five member

6

House of Assembly (CDoFAT 2002). Launceston, Devonport and Burnie are the three major regional centres of Tasmania and most of the remaining population reside in and around them. Known as the 'Apple Isle' Tasmania's apple industry, although declining a little, still makes a significant contribution to the island's economy. Just under one third of the state is utilised for agriculture with beef, sheep and cropping as the main activities undertaken (CDoFAT 2002). More recently poppies grown for the pharmaceutical industry have also become a major agricultural focus in the state. Timber, mining and fishing also contribute to Tasmania's economy. The island produces wood products, specialty foods and textiles. Over the last few years there has been substantial growth in the wine industry and the development of wine routes has contributed strongly to the state's tourist appeal.

The total population of Tasmania is small (473300) and if current trends continue it will reduce even further, for while the state attracts people from mainland Australia as visitors, it loses its own residents to permanent interstate migration (ABS 2002). Issues such as high unemployment (8.5%) encourage Tasmanians to leave and seek work on the mainland. Although the state has a university, maritime college and TAFE many people seeking higher education move to mainland universities. This has contributed to Tasmania having the lowest percentage of 15-65 year olds in Australia. It is however a popular place to retire to and has the second highest percentage of over 65 year olds in the country (South Australia has the highest percentage). It also recorded the only increase in aboriginal population in Australia during the 1986-1996 period (TGPD 2001). One of the consequences of supporting such a dispersed and aging population is that heavy demands are placed upon the state's health services.

Tasmania's health care system
The health care system in Tasmania is both public and private. Like the rest of Australia's states, Tasmania has a comprehensive range of health services to cover areas such as acute care, mental and community health and aged care. As with the other states a major focus in the health system is the provision of infrastructure to support the acute care needs of the population. An indication of the state's capacity

to do this is given in Table 1. The state Department of Health and Human Services (DHHS) is responsible for the public health care sector in Tasmania and is one of the state's biggest employers (DHHS 2002). The major public hospitals are the Royal Hobart Hospital (Tasmania's only tertiary referral hospital), the Launceston General Hospital and the North West Regional Hospital. Each has an operating department and is capable of undertaking a broad range of surgical procedures. Private hospitals with operating departments include Hobart Private, Calvary, St Helens, St Vincents, St Lukes and Latrobe Hospitals. There are a number of other rural community hospitals, multipurpose centres and multi-purpose services scattered across the state. While some are able to conduct surgical procedures they do not have operating departments with staff dedicated to the area.

Table 1: Tasmania's acute care capacity (DHHS 2001b)

Region and Hospitals	Private/Public	Number of Acute Beds
South		
Royal Hobart Hospital	Public	468
Calvary	Private	269
St Helens	Private	100
Hobart Private	Private	142
North		
Launceston General	Public	296
St Vincents	Private	108
St Lukes	Private	120
North West		
North West regional	Public	131
North West Private	Private	56
Latrobe	Private	90
Sundry rural/remote state-wide		164
Total		1944

All health professions are represented in the Tasmanian Health workforce although there are serious shortages for many, particularly in the rural areas. This is compounded by the lack of educational opportunities in Tasmania for people wishing to prepare for a career in a health discipline that is not medicine, nursing, pharmacy or social work. Because of this Tasmania finds it difficult to attract health care professionals from interstate. Although an undergraduate nursing course is offered through the University of Tasmania there is a significant shortage of nurses in the state and this impacts upon the ability of operating departments to attract nurses.

According to the Australian Institute of Health and Welfare's latest available labour force statistics (AIHW 2000) there are just over six thousand nurses working in Tasmania. Of these approximately 7% are employed in the operating room. The Workforce Data Working Group formed as part of the Tasmanian Nurse Workforce Planning Project surveyed all nurses applying to have their practicing certificates renewed in 2001. They reported that 76.4% of the nurses responded to their survey (n=4619) and of these most were first registered between 1966 and 1990. Approximately 46% of these were aged over 45 years (DHHS 2001a). Like the rest of Australia Tasmania must adapt to an aging nursing workforce and this is a particular issues in the OR where (as already noted) difficulties recruiting younger staff members are acute.

Issues concerning operating room nursing

Grave concerns surrounding recruitment of new nurses and retention of existing numbers of nurses in operating rooms are magnified by moves to replace traditional nursing roles in theatre with non-registered personnel. Inadequate explication of the operating room nurse's role is at the root of this problem. The apparent undercurrent of complacency amongst nurses and hospital management towards protecting this area of nursing practice has created the opportunity for non-registered personnel to replace nurses in the operating room. The basis for this complacency appears to be, at least in part, the taken-for-grantedness of nursing practice. There is an urgent need to communicate what operating room nurses do and how they impact upon patient care and the function of the operating department.

Like many nurses, OR nurses are challenged each day by a health care system characterised by increasing workloads and decreasing staffing numbers. They also face continual and crippling speculation from non-theatre nurses and others as to whether or not theatre nursing constitutes real nursing. This situation has arisen for a number of reasons. The operating room is typically isolated from the mainstream of the hospital making it hard for other staff within the hospital to observe the work of the OR nurses. In addition the department is not publicly accessible in the way that the ward areas of a hospital are. This means that the public relies on media portrayal of the area, a portrayal that tends to be surgeon-centric whether dealing with fact or fiction. There also seems to be a lack of understanding amongst the very people with whom the nurses work most closely. A quote from one of the surgeons drawn from the study's field notes illustrates the problem clearly. On overhearing the purpose of the research he said, '...so you want to know what nurses do in theatre. I can tell you what they do. Nothing[1].' The historical development of the role offers a possible explanation for the ignorance apparent not only in this surgeon's comment but within the popular images of OR nursing.

Development of operating room nursing

Since 1880 the role of the operating room nurse has evolved in tune with the changes in surgical and anaesthetic techniques as well as those changes occurring within the nursing profession itself. Advances such as anaesthesia with ether, asepsis, antiseptics (all discovered between the mid and late 19th century) and antibiotics (1929) moved surgical operations from an exceedingly risky undertaking with extremely high rates of infection and mortality, to one with an increasing level of complexity and concomitant rate of success (McGarvey, Chambers & Boore 2000; Cooper & O'Leary 1999 and Gruendemann & Fernsebner, 1995). The design of operating rooms changed in tune with these advances. The initial tiered wooden theatre structure was designed to accommodate medical students observing surgeons performing operations (Essex-Loprest 1999). The original purpose led to these rooms being called 'theatres' a name that has endured. Gustav Neuber, a German

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[1] Field note lines 2812-2813

surgeon, recognised that neither the wooden surfaces nor the numbers of students were conducive to best surgical outcomes. In 1885 he built a set of theatres in his own private hospital that were constructed of easily cleaned non-porous materials. Sterilisation of instruments could occur in these theatres, dirty and clean procedures were conducted in separate rooms and students were restricted to just one theatre (Clemons 2000). Neuber's work had a profound impact on surgeons working in the United States of America, the United Kingdom and Australia. The marble William J. Syms Operating Pavilion, built in 1891 at Roseville Hospital in the city of New York was the first operating suite (set of operating rooms) built in the United States that utilised Neuber's principles. Lighting, sterilisation facilities, ventilation, storage and rooms for doctors and nurses were included in its construction.

By the 1880s in America a 'housekeeper' role for nurses was created in the operating room. This was soon expanded to enable them to act as an assistant to the surgeon. Shortly thereafter nursing students began rotating through the operating theatre as a matter of course. The nursing role expanded in response to the physical trauma experienced by servicemen during World Wars I and II that served to advance the sophistication of surgical tools and techniques. The scope of practice was further enlarged by the substantial progress made in technology in the post war years. This progress included the development of the following, now standard, features:
- anaesthetic rooms;
- recovery rooms;
- positive pressure ventilation;
- grouping of theatres;
- theatre departments in close proximity to the wards;
- separation of clean and dirty maintained through a unidirectional traffic flow, and
- scavenger extraction systems (Essex-Loprest 1999).

When conducting background work for her doctoral thesis Rabach (2002) discovered that the history of operating room nursing in Australia was not well documented. Through extensive archival work she unearthed historical documentation of the role but this was limited to Victoria. She discovered that in the 1800s nurses, as a cheaper

source of labour, began to replace wardsmen in the theatres in Victoria. From 1861 rotations to theatre were included in Victorian nurse training. By 1902 the position of instrument nurse had been established and by 1910 the term 'theatre sister' had been adopted. There is no further substantive historical documentation outlining the development of the OR nursing role in Australia.

Operating Room nurses had a relatively low profile in Australia until 1977. In that year the Australian Confederation of Operating Room Nurses (ACORN)[2] was formed. It had significant impact upon OR nursing. ACORN's chief purpose was to consider aspects of operating room practice and develop clinical guidelines, standards and policy statements. In response to the development of the Australasian Nurse Registering Authorities Conference (ANRAC) competencies for registered nurses, ACORN also took carriage of the development of competencies for perioperative nursing practice, validated in 1999[3]. In 2000 ACORN became the Australian College of Operating Room Nurses, establishing a secretariat in South Australia (ACORN 2002). The competencies are on the verge of being reviewed (Manning, personal communication 2002)

The American Association of Perioperative Nurses (AORN[4]) was well established by the time ACORN was formed. In 1969 AORN published the first official statement delineating the nursing care of the patient in the operating room. From this beginning the role gradually expanded to incorporate a more flexible approach in which areas such as:

- leadership;
- management of risk, surgical environment and technology;
- resource planning;

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[2] ACORN is the Australian College of Operating Room Nurses, the professional body that represents operating room nurses in Australia.

[3] In ACORN Journal 12(3) 1999, p.18.

[4] Originally the Association of Operating Room Nurses AORN is the professional body representing operating room nurses in the United States of America.

- knowledge of the legal and ethical elements of the role and international practice;
- research, and
- sound interpersonal skills (Gruendemann and Fernsebner (1995a).

This scope of practice is clearly reflected in the ACORN (2000) Standards, Guidelines and Policy Statements an outstanding feature of which is the centrality of the patient to the activities of the nurses.

Nursing in operating rooms today bears little resemblance to the original 'housekeeping' role, however echoes of the historical events shaping the field can still be found in the way in which people outside the operating room try to make sense of contemporary OR nursing. This confusion has had, and continues to have, a profound impact on the nurses within the area. It has contributed to the current crisis in OR nursing, resulting in decreased RN staffing levels, role blurring and limited educational opportunities for OR nurses. Clarification of contemporary operating room nursing is essential if these issues are to be addressed in the future. This study seeks to provide insight, and thereby clarification, into the contribution nurses make in terms of the overall functioning of the operating room. In order to do so, clear definitions of key operating room terms that will be used in the final study account are defined.

Definition of key operating room terms used in the ethnography

The definitions of key terms are drawn from the work of Astbury (1988), Groah (1990) and Hind & Wicker (2000) and are then applied to the culture addressed in the study. Consequently they are intended to be particular to the ORS in which the study was conducted although other general definitions exist for all the terms. For clarity the terms and their definitions are divided into categories.

Physical areas
- Operating Room Suite: (ORS) an organisational unit consisting of one or more operating suites, waiting area, change rooms, recovery areas and circulating spaces. This is also known as the Operating Department or more generically as 'theatre'. It is the setting of this study.

- Theatre Suite: includes the operating room, and its adjacent areas. The adjacent areas include such areas as set up room, anaesthetic room, clean up area.
- Operating Room: is defined as the room in which the operation takes place. This is also known as the operating theatre.
- Recovery Room: accommodates patients following the completion of the operation for the purpose of monitoring their recovery and establishing pain control measures.

Activities

- Set up: the preparation undertaken by the nurses and technicians to ready an operating room and the accompanying instruments and equipment for the operation.
- Resetting the theatre: clearing away from a previous operation and setting up the theatre for the next operation.
- Scrubbing: this term is used to denote two activities (i) completing a surgical hand wash and donning sterile surgical attire and (ii) to denote the scrub nurse.
- Scouting: the activity undertaken by the scout nurse (see people).
- Anaesthetics: the chemical and mechanical alteration of consciousness, pain perception and muscle activity.
- Surgery: the treatment of injuries, deformities or diseases by manual operation.
- Sterile field: an area which is uncontaminated by unsterile objects. The instrument tray is an example of a sterile field.

People

- Scrub nurse: a registered nurse who is responsible for the setting up, provision and care of the instruments and sterile supplies from within the sterile field. This nurse is also known as the instrument nurse.
- Scout nurse: a registered nurse who coordinates the activities of the operating room, ensures that all necessary equipment and supplies are available, facilitates communication between the sterile and unsterile areas and completes documentation. This nurses is also known as the circulating nurse.
- Anaesthetic nurse: the registered nurse who assists the anaesthetist.

- Theatre technician: a non-registered person who maintains and provides equipment, assists the nursing and medical staff with activities such as patient positioning.
- Clinical aide: a non-registered person who is responsible for such areas as cleaning and store provisions.
- Ward clerk: a person who has administrative responsibilities relating to patient reception, theatre bookings, communications.
- Anaesthetist: the specialist medical officer who has the primary responsibility for delivery and maintenance of the anaesthetic. The anaesthetist also carries responsibility for haemodynamic monitoring and maintenance.
- Surgeon: the specialist medical officer who has primary responsibility for carrying out the surgical procedure.
- Registrar: a medical officer enrolled in a medical specialty program. In theatre the registrars are either surgical or anaesthetic registrars.
- Resident: the resident medical officer (RMO) not enrolled in a specialty program and usually in the graduate year.
- Student: usually refers to an undergraduate nursing or medical student visiting the ORS to observe operations.

Organisation of the study

The study is presented in ten chapters. The introduction, literature review, research methodology and research methods discuss the study background and design. The study findings are presented as a six part ethnographic account of operating room nursing. The concluding chapter closes the ethnography and concludes the thesis.

The **Introduction** provides the background, purpose and justification of the research, the assumptions that underpin it and definitions of key terms. The organisation of the study completes the chapter.

The **Literature Review** presents an exploration of the broad study area through the literature. Past, present and future issues that impact upon the culture of the

operating room are explored, and the relationship between the literature and the research purpose and design is established.

The **Research Methodology** introduces hermeneutic ethnography as the research methodology. The historical development of ethnography and hermeneutic philosophy is traced. The type of ethnography and school of hermeneutic thought that is used in this study is explained and justified in relation to operating room nursing and the study's purpose. This chapter demonstrates the links between ethnography and the study's hermeneutic foundations, with emphasis on the works of Clifford Geertz and Hans-Georg Gadamer.

The **Research Methods** presents the research strategies used in the study. The data collection methods (participant observation, interview and the use of a combined field and reflective journal) and the process of data analysis are justified and issues of access and representation are addressed. A discussion exploring authorship is presented and the ethnography is introduced.

The **Ethnographic Account** contains the ethnographic account of operating room nursing. It is entitled *Theatre Wear Must be Worn Beyond this Point*. The title is drawn from the overhead sign seen by all incoming people to the Operating Room Suite (ORS) in which the study was conducted. This sign is a physical cultural marker clearly defining the entry point to the culture. The ethnographic account is constructed through the development of six main themes that have been likened to the layers opened during a surgical operation. The six layers are:

- Operating Room Nurses and Space;
- Operating Room Nurses and Time;
- Operating Room Nurses and Artefacts;
- Operating Room Nurses and Patients;
- Operating Room Nurses and the Permanent Team, and
- Operating Room Nurses and the Multidisciplinary Team.

Each layer commences with a composite story drawn from the field notes and is designed to illustrate the raw complexity of the operating room and the nurses'

activities in relation to that complexity. They are not analysed but seek to capture a sense of the whole picture as a prelude to the exploration and analysis of the discrete elements they allude to.

Operating Room Nurses and Space considers the use of physical spaces within the ORS. The territories and related rules of the Operating Room are explored. *Operating Room Nurses and Time* presents the coexisting and conflicting ways of understanding time in the ORS and *Operating Room Nurses and Artefacts* illustrates the significance of instruments and theatre wear to the nurses within the culture. The remaining layers explore three cardinal relationships that exist in the Operating Room. In *Operating Room Nurses and Patients* the tension between 'technical' and 'caring' work is discussed and the concept of 'normal' terror is uncovered. The cultural determinants of the role of the nurse in ensuring the safe passage of the patient and the ways in which 'advocacy' is understood and realised are developed. The invisible nature of the nurses' work in the operating room is also introduced. *Operating Room Nurses and the Permanent Team* and *Operating Room Nurses and the Multidisciplinary Team* explore the cultural rhetoric and actuality of teamwork. Types of teams, their members and significant relationships within the teams are explored. Cultural activities that promote and restrain effective teamwork are discussed and team-peace, team-play and team-tension are advanced as significant elements of the culture.

The **Conclusion** is presented in two parts. The first part is a closure to the ethnography. It provides a theoretical discussion of the ethnography drawing the work together as a whole by exploring two significant theoretical constructs. The second part of the conclusion concludes the thesis. It provides an evaluation of the research process used in the study and the ethnographic account produced. This final chapter considers the study's significance and makes recommendations for future inquiry into operating room nursing.

Summary of the introduction
The ongoing existence of nursing in the operating room is threatened by a lack of an explicit and exacting justification for their presence in theatre. Non-registered

workers are already assuming aspects of the nurses' role. Difficulty attracting nurses to the area combined with an aging OR nurse population compounds the situation. Clarification of the nurses contribution to the functioning of the OR is required if nurses are to construct effective arguments in support of a continued role in the theatre.

The overall purpose of the study was to create an ethnographic account of operating room nursing. The study sought to generate substantive theoretical insights into the world of operating room nursing; to render nurses' accounts of their practice and actions visible; to increase operating room nurses' awareness of the ways in which the culture determines their behaviour and conversely how they contribute to making and sustaining that culture and finally to produce an account that would render the nurses' contribution to patient care in the operating room visible and understandable to people not working in the area. The study was guided by the ethnographically determined questions 'What do operating room nurses do in their day-to-day work lives?' 'When do operating room nurses do what they do?' 'How do operating room nurses do what they do?' 'Whom do they do it with?' ' Why do they do it?' And 'how can this be understood in terms of the culture they work within'. The final product of this study is an ethnographic account of operating room nursing presented in six thematic Layers.

Literature Review

Introduction

The purpose of this literature review is to provide a background to the study, to establish what complimentary research has been done and to develop an argument for the necessity of this ethnographic study. Literature was sought that focused on what is known about the culture of the operating room and the role of the perioperative nurse. As is conventional in ethnographic research more literature is woven into the ethnographic account of operating room nursing where a more focused theoretical interpretation of the specific issues is presented.

The international literature surrounding operating departments and operating room nursing is broad. In terms of providing substantial evidence regarding the cultural environment and working lives of OR nurses, however, it is very limited. In light of their review of OR nursing two Australian authors Riley & Peters (2000) agree with that conclusion. They write that accounts of nursing practice in operating theatres are largely descriptive and non-research based and that the views of the operating room nurses themselves are not included. Explorations of the operating room tend to focus on the activities of the surgeons while research that focuses on nursing is limited and tends to address the area indirectly. The majority of the literature reviewed was written in such as way that only readers with insider knowledge could fully appreciate the content thus excluding people who have no or little experience of the operating room. In light of the limited amount of research that has been conducted in the fields directly relating to perioperative nursing and the culture of the operating room, the review also draws upon non-research based publications and the work of experts in the field. It opens with a review of the literature addressing the culture of the operating room itself.

The culture of the operating room

The major focus of explorations into the cultural aspects of the operating room have typically been concerned with the work of the surgeon. The nature of the surgeon's

work readily captures the imagination of the layperson. The popularity of such television series as the BBC's 'Your Life in their Hands' (first run in 1957 with a new series in the 1980s) and the Australian 'RPA' promote the view of surgeons as heroic figures. The Granada comedy 'Surgical Spirit' (1989-1995) provided a satirical characterisation of staff working in the operating department but its principal characters (both heroes and villains) were medical staff. The news media bolster this image with headlines such as 'a team of surgeons at Great Ormond Street Hospital in London worked through the night to save the lives of Siamese twins' (BBC 1998) and on Australia's ABC 'surgeons worked through the night at Albury Base Hospital to treat some of the injured bus passengers' (ABC 3 May 2002). The efforts of the nurses, technicians and anaesthetists who work alongside these same surgeons are rarely mentioned although this may be slowly changing. In America, for example, CNN reported that 'a team of 20 nurses and doctors worked through the night to separate the twins and save Jodie in October' (CNN 2000). Notwithstanding this last example, the view of the surgeon as the key figure in the operating room is not confined to the media but extends to the research literature surrounding the culture of the operating room. There have been several landmark publications exploring cultural aspects of the operating theatre. Fox (1992), Cassell (1991, 1998) and Katz (1999) all conducted ethnographic research into culture in the operating department. The focus of these four studies was solidly on the surgeons.

Nicholas Fox's engaging ethnography *The Social Meaning of Surgery* (1992) is a revealing journey into the operating room that concentrates primarily upon the surgeons. Thus the structure of the OR, the relationship the surgeons have with anaesthetists and patients and even the coordination of the OR department itself is focused narrowly on the impact they all have on the surgeons and their ability to perform surgery. The role of the nurse is addressed both fleetingly and inadequately. While Fox provides a cursory glimpse at the tasks associated with the nurses there is no in-depth analysis of their contribution to the surgical enterprise and they are more often than not lost in a generic supporting staff group. The greatest detail on nurses' roles is provided in the section 'Operating theatre personnel'. This section addresses the scrub, circulating and anaesthetic nurse roles in the space of two short

paragraphs. Given that nurses are the biggest professional group in the operating room it seems unusual that they are next to invisible in a text with such a broad (and perhaps misleading) title. Yet the early medical background of the author and his position within a Department of General Practice may go some way to explain the particular medical lens through which this sociological study was conducted.

In her book *Expected Miracles* (1991) medical anthropologist Joan Cassell portrays the culture of surgery. Her book focuses on the surgeons, their performance in the operating room (situated in America) and their characteristics. It reflects the heroic undertakings of the surgeons as they work to perform the 'miracles' that both they and the patients expect. In her determination to provide an objective account of the surgeons, Cassell provides context with her extensive observations and draws on the interviews with the surgeons themselves. Her bias revealed by her stated belief that successful surgery is a 'miracle' implicitly constitutes the surgeons as miracle workers. Her later book *The Women in the Surgeon's Body* (1998) explores the experiences of female surgeons in an American theatre suite. In this exploration of the lives of thirty three female surgeons Cassell found that they were more able to combine compassion with good surgical technique than were their male colleagues but they were afforded less recognition for their ability. On the whole, their lives were more complex and less well supported than the male surgeons. While illuminating the world of the surgeon, neither text moves beyond this to consider the nursing contribution to their work lives and to the achievement of those 'expected miracles'. Indeed her references to nurses were negative and dismissive in both of her accounts.

In a later text *The Scalpel's Edge: The Culture of Surgeons* (1999) Pearl Katz also provides insight into the world of the surgeon in an American hospital. She is less overawed by them than Cassell appears to be, discussing their many guises and styles. Her insight into the 'active posture' that surgeons adopt is enlightening. Her comments regarding nurses are largely limited to the automatic practice of OR rituals. Beyond this she makes no attempt to account for their contribution to the surgical effort.

21

A recent smaller study conducted by Tanner & Timmons (2000) begins to redress the balance and includes nurses in the exploration of the cultural world of the operating theatre. These authors base their study on the work of Erving Goffman arguing that the theatre is a 'backstage' environment, an environment where the reality of the work world contradicts what is seen (or in the case of theatre, imagined) publicly. They argue that the geographical isolation of the OR predisposes it to being a backstage environment. As such the staff are much more relaxed and informal with each other than elsewhere in the hospital. Examples of staff calling each other by first names, telling jokes and being friendly are offered as evidence of this. Tanner & Timmons note that the boundaries of some professional roles blur with nurses and doctors sometimes undertaking aspects of each other's work (eg. positioning and suturing). What this paper fails to address is that while relaxed staff relationships exist in the theatres, the hierarchical structure of the theatre is fully intact. The example of nurses bringing anaesthetists coffee might indeed show a friendly relationship but an example of anaesthetists bringing nurses coffee would strengthen the 'backstage' argument. In the absence of the latter example, the development of the operating department as a backstage environment feels contrived. Perhaps the most salient part of this paper, and one that is based on Goffman's concept of 'face', is the argument that the nurses must undertake the emotional labour required to make people (patients, surgeons and others) feel good about themselves in the theatre. This argument is reflected in literature addressing the role of the operating room nurse and the issues with which they contend (Michael & Jenkins 2001 a, b & c; Williams 2000 and Moore 1997).

Harley's descriptive ethnographic study conducted as a Masters dissertation in 1997, provides insight into the world of operating room nursing. Themes such as teamwork, the unique nature of theatre as a workplace, tasks and the object-patient are all described within her work. This lively, descriptive account makes aspects of OR nursing more visible. The work does not include observations made by the researcher however, but draws heavily upon the interview data, relying on insider knowledge to interpret the underlying meaning of the participating nurses' stories. Some similarity exists between Harley's work and this study, but while her

ethnographic account focused on nurses it is descriptive and has a limited scope. Further, the findings include only interview-based data.

Although not a research based text Hind & Wicker (2000) *Principles of Perioperative Practice* offers some insight into OR nursing and the culture of the operating theatre. Issues such as risk management, quality assurance, work place bullying, evidence-based practice and teamwork are all discussed in a 'broad brush' approach. Written for practitioners within the field and associated academics, it does not, as Melby (2001) notes in her review of the book, illuminate the area for people outside the field.

While literature that illuminates the culture of the OR from a nurse-focused perspective is sparse there is a small body of literature that addresses various aspects of OR nursing. Analysis of the content of this literature reveals four conceptual strands for discussion within this literature review. The strands are:

- a reductionist view of operating room nursing;
- an insider's view of operating room nursing;
- threats to operating room nursing, and
- the future of operating room nursing.

The reductionist view of operating room nursing

The need to develop a clear picture of what it is that nurses contribute to the operating room is well recognised. McGarvey, Chambers & Boore (2000) develop a compelling argument supporting the need to clearly define what it is that nurses actually do behind the closed doors of the operating department. They argue that the invisibility of OR nursing to the broader health care community has done a serious disservice to the group, resulting in intense and perhaps unsympathetic scrutiny from budget-focused health service managers. The OR nurses' drive to account for their practice to non-nurses has required increasing amounts of documentation. While this is consistent with the pressures felt by the wider nursing profession (Purkis 1999) operating room nurses are further disadvantaged because their nursing activities are not explicitly recorded in the perioperative documentation. This, according to Beyea (2001) makes their contribution to the surgical effort difficult to delineate and

23

evaluate and as McNamara (1995) argues, perpetrates the popular belief that operating room nursing is solely focused on the technical aspects of surgery. Operating Room nurses are negatively affected by the difficulty in defining what they do, what they contribute and whether it is nursing (Sigurdsson 2001). This is despite the adoption of the title 'perioperative nurse' which is associated with a more holistic and less task-focused role than the older 'theatre nurse' title (Kneedler & Dodge 1991). The ongoing struggle to defend their right to practice is destructive. It contributes to feelings of ambivalence about working as perioperative nurses (Sigurdsson 2001) and compounds the difficulty of retaining nurses in the OR.

What is clear in the literature is that the role of the operating room nurse is complicated and expanding. Burgeoning documentation, theatre schedules and reduced staffing numbers are factors that contribute to this complexity. Glaze (1998a) found that nurses have a strong sense of responsibility that is illustrated in the way in which they use knowledge, encourage staff development and coordinate the operating department. In a later article this author discusses the importance of preparation and strategic planning when anticipating and responding to emergencies (Glaze 1999b). Organisational skills are of paramount importance to the operating department (Taylor & Campbell 1999 p.416). Preparation of a theatre, coordination of equipment, the operating list and the stock all fall within the organisational role of the nurse. These authors suggest that the nurses must also be responsible for limiting the time that patients are anaesthetised, must ensure learning opportunities are available to all learners and provide adequate support to other staff members when required. Bynon (1998) considers that nurses must act as the patient's advocate because the patients' ability to communicate their needs is compromised and the nurse acts in their interests throughout the operation. Edwards (1997) extends the role of advocate, in the event of sudden patient death, to include the family and other staff. In light of these expectations it is unsurprising that OR nurses feel like they are all things to all people. It is a perception that is reflected in both Gregory-Dawes (1999) and Chard's (2000) papers. They suggest that it is becoming increasingly difficult for OR nurses to meet patient care requirements adequately in the face of this range of complex and conflicting demands. Glaze (1998b) also notes that nurses

are under pressure to play a financial management role, learning to speak the double talk of theatre that equates quality care with increased throughput.

The unwieldy and ambiguous nature of OR nursing has meant that operating room nursing groups have utilised a reductionist approach to delineate the elements of their role. This approach was employed in Australia when ACORN recognised the need to develop competency standards for Registered Nurses working in the perioperative environment. Following revision of the ACORN standards, the draft competencies were developed through the ACORN competency project established in 1993. The researchers combined survey, observational and expert panel workshop techniques to compile the first draft of the competencies (ACORN 1999). These were presented to at the ACORN Council meeting in August 1994. Comments from OR nurses were then invited through the ACORN Journal and in 1996 the ACORN Council received the final competency document (Hines 1999). Currently there are eleven competency standards (Appendix I) and there are plans to revise them in the near future (Manning, personal communication 2002).

Similarly in America an AORN task force was established in 1993 to create a standardised method for naming what perioperative nurses do (Kleinbeck 1996). To do this they searched for the smallest meaningful units of information that itemised what operating room nurses did. The patient outcomes that the data elements were attached to were patient knowledge; freedom from infection; full skin integrity; freedom from injury; balanced fluid and electrolytes and participation in the rehabilitation process. By 1998 AORN had developed a documentation model that included the perioperative nursing data set, a set of standardised language, and a clinically validated perioperative patient focused model. This model could be used by RNs to document and describe their perioperative patient care (Rothrock & Smith 2000). The documentation model was recognised in 1999 by the American Nurses Association's Committee on Nursing Practice as being clinically useful (Beyea 2000a). This same author reports on the development of clinical practice guidelines by AORN (Beyea 2000b) noting that in their search for a patient-focused and outcomes-based model the project team selected the domains of 'patient safety',

'physiological responses', 'behavioural responses' and 'health system'. These domains, with the exception of 'health system' are consistent with the dimensions of perioperative nursing practice developed by Kleinbeck (2000) through a perioperative nurse-based survey.

Accounting for practice in this way meets the needs of accountants and administrators but does not throw light on the distinctive professional contribution made by nurses in the OR. On the other hand, by reducing OR nursing care to discrete elements nurses are better able to meet the demands of non-nurse managers for data relating to their effectiveness and efficiency. In their trial of a best quality patient care model based on shared governance Ide & Feming (1999) report that quality improvements were achieved through addressing a series of performance indicators, many of which reflected safety aspects of patient care. By measuring quality care outcomes on the basis of these indicators, goals were set and a cycle of improvement was established.

Compartmentalising OR nursing activities also provides an excellent basis for task based texts. For example the recently published *Review of Perioperative Nursing* by Hutchisson, Phippen and Wells (2000) demonstrates the propensity for OR nursing to be understood in terms of task-based activities. Chapters such as transferring the patient, establishing and maintaining a sterile field and positioning the patient are typical of the text. So while the reduction of OR nursing into its discrete components contributes to standardising documentation and formatting skill-development texts, it does so at the expense of gaining a holistic view of nursing in the operating room.

While in some ways expedient, this fragmentation does not capture the essential nature of OR nursing. It does not clarify what it actually is and loses a sense of the whole of the specialty. As McNamara (1995) argues most perioperative research has tended to be quantitative reducing operating room nursing to a dry inventory of technologically orientated tasks. Yet research prior to her work in 1995 suggests OR nurses are satisfied and comfortable with a task driven, technically orientated role (Kalideen 1994; McGee 1994 and Roberts 1989). This may have contributed, at least

in part, to the popular way of understanding the work of the operating room nurse. The reductionist accounts of OR nursing contrast sharply with the way in which these nurses' perceive their own practice. Indeed the tension that exists between these two discourses summarises the difficulty that OR nurses have in describing what they do. While it is relatively easy to itemise discrete tasks such as performing surgical counts, preparing instruments and planning theatre lists, it is much harder to capture what can be described as the intangible whole of perioperative nursing. Research that has explored nurses' perceptions of their role as an operating room nurse has gone some way towards throwing light on this area.

The insiders' view of operating room nursing

In contrast to the research conducted to account for nursing activity in the theatre, the studies that are included in this section have attempted to uncover those aspects of nursing that are not readily observable and therefore not easily quantifiable. Such qualitative concepts as caring, connecting, embodied knowing and engagement with the operating room environment are common in these studies. Of these the concept of caring received the most detailed attention in this small body of literature.

The perception, both from outside and within the nursing profession, that operating room nursing is a technical undertaking that anyone could do has dogged OR nurses (Kneedler & Dodge 1991). Surkitt-Parr (1997) suggests that they must respond to the criticism that they are technically focused and as such do not do 'real nursing'. Graff (1999) argues that caring is the essence of theatre nursing and assertions such as 'a monkey could do the work' demonstrate a misunderstanding and devaluing of the role. However the technically focused view of theatre nursing is strengthened by the difficulty that OR nurses experience when attempting to justify how they make clinical decisions, a fundamental aspect of their practice. Parker (1999) notes that the way in which OR nurses make clinical decisions is not well documented stating that little research has been done in the field. In a phenomenological study addressing this gap she found that the nurses had developed a sophisticated process of patient care and clinical decision making that combined knowledge, ethical decision making, caring and commitment. Her notion of 'humanizing care' reflects much of

the literature that explores operating room nurses' own perceptions of their role and their profound desire to care for vulnerable people.

McNamara's (1995) study, which sought to uncover caring aspects of OR nursing, found that the nurses showed concern for their patients and recognised them as individuals. She found that they used touch, communicated and were acutely aware of their patients' emotional needs. Other research into this area suggests that nurses perceive the ways they cared for people to include 'being with' through touching and listening (McNamara 1995; Parker 1999 and Fredrikson 1999); acting as a patient advocate or protector (Cheung 1998; Parker 1999 and Chard 2000) as a support person (Sigurdsson 2001) and making sound clinical decisions and providing effective clinical intervention (Bassett & Bassett 1999 and Chard 2000).

When asked about their perceptions of the nursing care they had received from OR nurses, patients' responses reflected the nurses' beliefs about caring. For example in the study conducted by Leinonen, Leino-Kilpi, Ståhlberg and Lertola (2001) patients reported that they felt that they had received excellent care in regard to pain management (96%) and found the nurses to be caring, kind and respectful (100%). Just under one third of these patients did report however that they felt that their concerns had been ignored or passed on to another staff member to deal with (32%). Patients also considered teamwork, a professional demeanour and providing a relaxed atmosphere to be part of caring (Parsons, Kee & Gray 1993). These authors also found that knowledge and ability, kindness and consideration, reassurance, gentleness and cheerfulness were aspects considered most important by patients. Of note the patients did not feel that being touched was an important act of caring nor was being asked what they would like to be called.

Findings in Australia are similar. An Australian study using phenomenology found that post-operative patients believed that the 'engaged' or caring nurses behaviour included things like compassion and kindness, gentle touch, friendliness and cheerfulness and the attitude that suggested nothing was too much trouble. They also

found that patients experienced detached nurses as cold and sharp, judgmental, rough, too efficient and busy (Kralik, Koch & Wotton 1997).

Although Reid (1998) argues that information giving is a fundamental component of the OR nurses' role, the provision of information to patients as a nursing act is a point of disagreement in the literature. While overall studies involving nurses do not report this as an important aspect of caring, studies involving patients do. In her phenomenological study on nurses as patients Zeitz (1999) found that nurses needed to strike a balance between assisting and encouraging patients to act for themselves. She found, drawing upon one nurse's experience of requiring an operation that having a sense of control was important to patients. Her findings are supported by Leinonen et.al. (2001). It is possible that these conflicting findings can be attributed to the disparity surrounding the need felt by patients to participate in their care in the general nursing literature. Stein-Parbury (2000) argues that patients may be more willing to participate in their care if they are well informed and aware of choices. She notes however that studies in this area report findings that range from a strong desire to participate in care to an equally strong wish to acquiesce to the will of the nurses. This may be more marked in the operating department than in the ward or community setting as patients have traditionally played a passive role in the operating room. This situation may change as more patients have operations under regional anaesthesia and remain awake during their procedures.

In relation to people other than their patients, the importance of the team to OR nurses was highlighted. Bassett & Bassett (1999) found that nurses derived a great deal of satisfaction and enjoyment from working in a team. Their findings reflect those of Wicks (1999) in her ethnographic account *Nurses and Doctors at Work*. This author found that nurses valued working with other members of the health care team and the collegial relationships that developed. She found that a great deal of support was garnered from this source. McNeese-Smith's (1999) study on job-satisfaction in general nursing elicited similar findings as did Sigurdsson (2001), who found that OR nurses gained positively from good teamwork. She however notes that the nurses also found the relationships with other members of the team

stressful as they could act to diminish autonomy and create a sense of powerlessness in the nurses. Fisher & Peterson (1993) in their study of the care provided to the elderly by surgical staff members report similar findings, noting that the capacity of nurses to provide patient care in the OR was severely compromised by poor relations with the medical staff. This view is echoed by Chard (2000) who found that OR nurses perceived themselves as often being in conflict with medical staff. The nurses in her study blamed this on the ingrained hierarchical structures in the department and the propensity to overlook and even condone unacceptable behaviour.

In relation to the OR environment itself the nurses' responses indicated a sense of pride and enjoyment derived from working in such a challenging and unique environment. Bassett & Bassett (1999) found that while nurses had sought work in the operating department for a variety of reasons (not all related to interest in the specialty), they tended to stay because they found it exciting, challenging and rewarding. This finding is supported by those of Chard (2000) and Sigurdsson (2001) and at a more general level by McNeese-Smith (1999). Notwithstanding the pride, enjoyment and sense of fulfillment that the nurses who participated in these research studies reported, operating room nursing is under threat. Issues of recruitment, retention, role erosion and work place stress are impacting heavily on the world of the OR nurse. Research and related literature addressing these issues form the third conceptual strand of the literature review.

Threats to operating room nursing

There is a clearly developed theme of threat within the literature surrounding OR nursing. This theme is evident within discussions about recruitment and retention of nurses to theatre, role erosion and role extension, increasing patient numbers and decreasing resources. Combined with the difficulty OR nurses appear to have in justifying their role in the theatre, these issues pose a formidable threat to perioperative nursing and nurses.

Recruitment and retention

Concerns about the shortage of nurses in theatre are evident in both the national and international literature. One of the key reasons given in the literature for the low

numbers of nurses seeking to work in the operating room is the lack of exposure to the area during their undergraduate nursing preparation. In a brief paper to the *Nursing Times* Salvage (2000) notes that nurses require direct experience of the theatre to recognise it as a good place to work. She adds that decreasing exposure of nursing students to theatre is reducing the effectiveness of this strategy to attract nurses to the area post-graduation. Others including Montgomery (2000), Graff (1999), White (1999), Happell (1999) and Manninen (1998) share this view.

Graff (1999) calls both OR nurses and universities to account for the recruitment crisis. She believes that OR nurses have allowed their specialty to be seen as 'not proper nursing' and universities, through their schools of nursing, have consolidated this message through a systematic reduction of perioperative focus in the various undergraduate curricula. The limited exposure to theatre in undergraduate nursing courses serves to strengthen the notion that OR nursing is not real nursing and reduces students desire to seek work there following graduation. Penprase (2000) agrees arguing that the area is less attractive to new nurses as the stereotype of the technical rather than the patient-orientated nurse is compounded by the reduction of exposure in the student years. This would appear to be deeply problematic for OR nursing as White (1999) found students already held a poor image of the specialty believing that it lacked patient contact and real nursing care. They also believed that nurses are subservient to surgeons and are frightened by the instrumentation.

Contrary to White's findings however, Happell found OR nursing to be one of the most attractive areas to undergraduate students. The reasons given by students for this were that it had a '... challenging, interesting and exciting atmosphere' (Happell 1999 p.502). Students also reported finding the opportunity to observe the human body appealing. Further, they were attracted to the responsibility of the position, the possibility of saving lives and the teamwork. This same author argues that OR nursing is being threatened and that the main factors contributing to this are the inability to attract nurses and the increase of non-nursing staff undertaking nursing activities (Happell 2000). She argues that the lack of exposure to the OR during undergraduate preparation means that graduates are less likely to form an interest in

the OR and will not seek employment in the area. Her longitudinal, questionnaire-based study explored career preference amongst first year nursing students in Victoria, Australia. Almost half of all first year students in Victoria completed the questionnaire (n=793). Of these 16.8% (n=133) chose operating theatre as their first preference. This indicates that there is a significant interest in the OR as a place of work at the commencement of the nursing degree. Therefore an opportunity exists to encourage students to pursue this career course.

The role of universities in influencing career choice cannot be underestimated. Manninen (1998) found, when studying the change in students' perceptions about nursing, that the structure of subjects combined with the input of people in clinical settings heavily influenced the values held by the students and the areas that they became interested in. Evidence to support this can be found in a paper by Peters & Frazer (1999). These authors implemented and evaluated a perioperative nursing elective for Bachelor of Nursing students in Victoria. They did so as a way of increasing opportunity for exposure to the setting. When they offered the elective it was quickly oversubscribed with enthusiastic students. The evaluation reflected a positive response to the experience and most of the students indicated that they would be interested in taking up OR nursing as a career. Their evaluation of preceptors found that 19 of the 20 preceptors would gladly take on the role again. The evaluation, while not rigorous, provides some insight into how students might respond to the opportunity to gain experience in theatre.

One of the key features of the Peters & Frazer (1999) project was the inclusion of enthusiastic preceptors to support the students. The need for support of this kind extends beyond the undergraduate years and into the postgraduate rotation into theatre. Excellent orientation programs for new graduates are essential if operating departments are to respond to the difficulties of recruiting nurses to the area and retaining them (Penprase 2000). Penprase notes that nurses require an intense and lengthy orientation to the area in order to gain the competence and confidence to remain there. She suggests that lack of continuity of preceptors and limited supervision can impact on the success of the orientation as a retention strategy. She

reports on the implementation of a collaborative orientation program between one university and an OR department. The evaluation of the pilot program showed that the overwhelming majority (96%) of the participants considered the orientation to be excellent and would consider pursuing OR nursing. The basis of this Australian study is consistent with the British experience. Mehigan's (2000) believes that the limited emphasis on OR nursing in the BN curriculum has a direct impact on whether or not students will choose the area as graduates. She also notes that there is a need to augment the basic education that enables nurses to register in order that they can work in the OR environment. She believes that the perioperative environment must be committed to a staff development program to promote this process.

Recruitment of nurses into the operating department is also somewhat reliant on the provision of suitable postgraduate preparation programs. There is little doubt that universities have been slow to recognise the need for undergraduate exposure to theatre. The same may be said for the development of postgraduate courses in OR nursing. Davies & Bryant (1995) describe the development of a perioperative education course by the NSW College of Nursing and the NSW Operating Theatre Association in response to the perceived indifference of universities towards OR nursing. The course was launched in 1992. In 1994 Rodgers, Nielson & Caradus reported on the successful perioperative nursing course at St Vincents Hospital, Sydney and on the development of the Graduate Diploma in Operating Suite Nursing at the University of Technology, Sydney. Since then post-graduate perioperative nursing courses have developed within the higher education sector in New South Wales, Queensland, South Australia, Tasmania, Victoria and Western Australia.

While the universities and operating room nurses themselves spend time reflecting on and rectifying their contribution to the recruitment and retention issue currently facing theatre departments, significant changes are already taking place within the operating departments themselves in response to the problem. The threat posed to OR nurses by the operating department practitioners, attendants and technicians is

gaining greater attention in the literature (Hind, Andrews, Galvin, Jackson & Platt-Mellor 2001; Coleman 2000; Thornley 2000 and Brougham & Berry 1994).

Non-registered health workers

There is an increasing number of non-registered care givers in the health workforce. In their outline of issues concerning nurses worldwide Pearson & Peels (2001) found that the most widespread problems were nursing shortages, salaries and working conditions. This considered, it is not surprising that the use of the non-registered health care worker is increasing. Their relative cheapness, flexibility and the ability to be multi-skilled are appealing to budget conscious managers (Thornley 2000). Thornley's study findings demonstrate that these non-registered health workers provide direct patient care and have a feeling of commitment to their role as care givers. The need for OR nurses to engage with this issue is evident. In their British-based study Hind et al (2001) explored the issues surrounding nurses and operating department assistants and practitioners (ODAs and ADPs) working and training together. They argued that nurses are in the unique position of being able to provide continuity of care for the patients. Doctors involved in the study indicated that they believed that nursing skills were needed in the theatre for the well being of the patients. Despite this the authors were unable to provide any evidence to suggest that ODAs and ODPs did not care for patients as nurses do.

The inability to clearly delineate what constitutes nursing impacts heavily on the future of OR nurses. White & Coleman (2000) draw from a wider study examining preoperative visiting to report on the perceived threats and opportunities for OR nurses. They found that theatre managers were unsure and generally pessimistic about the future of nurses in the operating room. They perceived the relationship between the nurses and the ODPs to be uneasy and believed that the nurses had a better knowledge base to work from than did the ODPs. Some of them considered that nurses would be taking on roles that were currently medical, thus becoming nurse practitioners or 1st assistants to the surgeon.

A similar situation exists in Australia. In 1995 Peters & Axford reported on their Australian questionnaire-based study that considered the utilisation of technicians in

the OR. Eighty-four nurse managers of Victorian OR suites were surveyed (90% return rate). The study found that there was an increasing trend in the metropolitan public and private sectors to employ technicians. They found that the type of technicians employed tended to be those who could directly assist medical and nursing staff. While not being used to replace nursing staff, technicians undertook direct patient care activities in 40% of the suites surveyed. Peters & Axford argue that their findings emphasise the need for nurses to define what direct patient care is in the operating suite. They note that the role of the theatre technician is growing and that the difficulties in recruiting and retaining nurses compound the urgency of role delineation. Just how urgent is clear in light of the recent development of the competency based National Training Package The *Certificate III in Health Service Assistance (Operating Theatre Support)* is now offered through the vocational education and training VET sector (NTIS 2002). The expansion and formal recognition of the theatre support worker's role in Australia may in itself contribute to reductions in nurse numbers as they are replaced with lower paid workers and may also increase demands on those nurses who remain. This is likely to raise the already high levels of stress.

Stress in the operating room

An increasing level of stress amongst nurses working in the operating room is being reported. Unbalanced work overloads, time pressures, poor communication, lack of reward, lack of appropriate skills, role ambiguity, conflict and undertaking complex responsibilities for other people contribute to the experience of stress in the OR (Astbury 1988 and Moore 1997). A further stressor that is receiving some attention is the experience of work-related trauma. Michael & Jenkins (2001a) argue that perioperative nurses have a high risk of exposure to trauma. Although it might be suspected that the type of injured patients that they deal with were the most traumatic events, this was not the case. The most frequently reported category of trauma was abuse from medical staff. They also reported verbal abuse from supervisors and colleagues as being traumatic. Another significant finding was that the unrealistic expectations placed upon them by people outside the OR, particularly those in management were perceived as traumatic by the nurses. What is startling about this research is that it is not the injury and suffering of patients that traumatises the

35

nurses but the acts of other staff members. These authors note in a related article (Michael & Jenkins 2001b) that while trauma in the work place has negative outcomes for many OR nurses, others respond positively and show great resilience. They report team building as one of the positive outcomes. In addition, personal growth, recognition of personal strength and the ability to respond and cope under pressure are also positive. Williams (2000) is in agreement with this, noting that responding to stress helps OR nurses to adapt and reorganise themselves. A third article by Michael and Jenkins notes the importance of support from colleagues when an OR nurse is recovering from work-place trauma (Michael & Jenkins 2001c). The positive characteristics and outcomes suggested by the authors are consistent with the findings of much of the literature discussed in the second conceptual strands 'The insider's view of operating room nursing'. It is this resilience of OR nurses that is called upon in the fourth and final conceptual strand in which the future challenges for OR nursing are discussed.

The future of operating room nursing

Threatened by the insidious influx of non-registered health workers and struggling to define the unique nursing contribution to the perioperative project, operating room nurses must also confront the need to change within their own roles.

RN 1st assistant

The role of RN 1st Assistant is being established internationally. An RN 1st assistant takes responsibility for aspects of surgery such as skin preparation, assisting with haemostasis, retracting organs, handling instruments and tissues and skin closure (Hind & Wicker 2000). These authors note that the assistant may take on an even more surgical role than this, harvesting veins and performing other minor surgery. In Australia a course to prepare OR nurses for this role has recently been established by ACORN in conjunction with Southern Cross University. As part of the ACORN Perioperative Nurse Surgeon's Assistant project a preliminary survey distributed to 449 hospitals in Australia (return rate 61%) found that in half of the hospitals there was requirement for RNs to act as 1st assistant whilst attending to their duties as instrument nurse. Eighty percent of all respondents were keen to have RNs undertake formal education as 1st assistants (Brennan 1998). The establishment of the course is

36

also supported by the findings of a study by Riley & Peters (2000). Set in Victoria, Australia, their study findings showed that the majority of the respondents would adopt the RN 1st assistant role and would therefore perform extended activities. Riley & Peters surmise that although their findings were somewhat ambiguous owing to low response rates, they felt it likely that nurses could imagine an advanced practice role but did not necessarily see themselves in that role. They found that barriers to taking up an advanced perioperative practice role existed. These included issues such as lack of time, legal implications, staff and gender politics, lack of funding and level of interest. In their conclusion Riley & Peters affirm that OR nurses need to actively examine how appropriate and feasible the current model of OR nursing practice is in the contemporary health care environment.

The need for OR nurses to undertake specialist responsibilities is well recognised internationally. Groah (1990) envisioned a nurse practitioner role in the operating room that included the role of 1st assistant. Rothrock (1993) sees it as inevitable with solid precedent set since the Crimean war. Beesley (1998) argues strongly in favour of a credentialed RN 1st assistant role. He reflects upon the concerns that nurses have when expected to play two roles (scrub and assistant) and considers that there are significant ethical and professional issues at stake. Wood (2002) agrees with this concern in her review of the dual role from an ethico-legal standpoint. Beesley goes on to argue that the surgeon cannot take responsibility for the actions of the nurse who without formal preparation for the role of 1st assistant is acting in the role of a doctor. He suggests that nurses need to gain the education and level of competence to do this role and then only to perform this or the scrub role so that neither is compromised. Beesley warns that unless nurses take up the challenge of 1st assistant, technicians will do so and that they, lacking a holistic focus, will act to further fragment patient care. Indeed the medical fraternity may more readily support technicians, who they can control, rather than nurses, in taking up the assistant role. Murray, a surgeon, addresses the inevitable expansion of the nursing role in the operating room and argues that '... the medical establishment must be custodians and leaders of this change' (Murray 1999 p.365). He is principally concerned that the surgeon must remain in overall charge of the operation and the nurse as 1st assistant

poses some threat to this. While there is little evidence in the literature to suggest that the RN 1st assistant role would challenge the surgeon's authority, the role certainly formally blurs the territory between the work of surgeons and nurses in the theatre.

Morrison (2000) suggests that one way to meet the demands of rapid change in OR nursing is to institute perioperative clinical nurse specialists. She envisages these nurses as possessing leadership skills as well as expert knowledge and skills to provide patient focused nursing care. She includes the patient-family unit acknowledging the importance of the family to the OR nursing role. This is consistent with the belief expressed by Paavilainen, Seppänen & Åstedt-Kurki (2001) who argue that OR nurses need to take a more family-centred approach to patient care and recommend that they develop this area for future practice.

Day surgery

Perioperative nurses are also responding to the increasing number of procedures carried out as day surgery, a trend that will continue to grow (Cameron 2000). There is evidence to suggest that patient outcomes from day surgery are no different to those for standard inpatient treatment and the process is far more cost effective (Conaghan, Figueira, Griffin & Clark 2002). Unerman (1999) suggests that patients having day surgery tend to be healthier than longer-term surgical patients and are, for the most part, awake during surgery. OR nurses will need to respond to these differences acknowledging that patients will be able to communicate during surgery and be more aware of what is occurring to them throughout the perioperative period. Furthermore Cameron (2000) believes that the trend towards day surgery and the associated changes in technology will further blur the boundaries between nursing, medicine and related health care practitioners.

Summary of the literature review

The review of the literature reflects the concerns expressed by McNamara (1995) and Riley & Peters (2000) that operating room nursing is not well understood and has been inadequately addressed in the research literature to date. Although task iteration, threats to the role and changes within OR nursing are all addressed there

appears to be a paucity of literature that addresses the culture of the operating theatre from the perspective of the nurses. This leaves a significant gap in the way OR nursing can be understood (Harley 1997). It is evident that while aspects of OR nursing have been widely discussed in the professional literature by experts in the field, there has been little research evidence to lend weight to the arguments. This study responds to the belief expressed by McGarvey et.al. (2000) that the role of nurses in operating theatres must be explored directly and clarified if it is to survive into the future. The rapid changes occurring in OR nursing demand that nurses actively engage in planning their future role in the area. It is on the basis of what is known and understood about OR nursing, and not a range of insightful but unsubstantiated recommendations, that plans for the future should be laid. The production of an accurate account of contemporary operating room nursing practice is therefore a matter of urgency. The development of such an account forms the central project of this research. The study will address the lack of adequate exploration into the day-to-day work lives of operating room nurses and will strive to do so by making the nurses' perspectives of their role clear. Hermeneutic ethnography was found to be the research methodology that best suited this purpose. It provided an appropriate philosophical stance and offered effective research methods. The following chapter provides a discussion of the research methodology in relation to this study.

Research Methodology

Introduction

This study was concerned with the creation of an interpretive account of the everyday world of operating room nurses. Hermeneutic ethnography was the methodology used to accomplish this. The methodology was particularly pertinent because it addressed the cultural and interpretive nature of the research purpose and acknowledged the reciprocal relationship between the nurses and the OR culture. Further, because the nurses' opinions, collected during the fieldwork, formed a significant proportion of the data, the methodology also accommodated their continuous reinterpretation of their actions and the reasons behind them (Bowers 1992).

Ethnography and hermeneutics are discussed within this chapter. Their respective backgrounds and development are traced to establish the links between them. The use of hermeneutic ethnography as the methodology for the study is justified. Before methodological discussion can be opened however, some account needs to be taken of the personal nature of the methodology. Vidich & Lyman note that 'lurking[5] behind each method of research is the personal equation supplied to the setting by the individual observer' (Vidich & Lyman 1994 p.24). As the methodology provides the foundations of the research methods, the significance of this 'personal equation' is implicated in the choice of the methodology and forms the basis of an important criterion against which the research is evaluated. The competence of the ethnography is evaluated upon its ability to represent a culture truthfully (Hammersley 1998). The justification of the methodology therefore begins with an exploration into the paradigms of knowledge in order to situate the interpretivist methodology of the study.

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[5] The original quotation begins 'Lurking behind ...'

Paradigms of knowledge and the nature of truth

One day, according to an Eastern story, the gods decided to create the universe. They created the stars, the sun, the moon. They created the seas, the mountains, the flowers, and the clouds. Then they created human beings. At the end, they created Truth. At this point, however, a problem arose: where should they hide Truth so that human beings would not find it right away. They wanted to prolong the adventure of the search.
'Let's put Truth on top of the highest mountain' said one of the gods. 'Certainly, it will be hard to find it there.'
'Let's put it on the farthest star,' said another.
'Let's hide it in the darkest and deepest of abysses.'
'Let's conceal it on the secret side of the moon.'
At the end, the wisest and most ancient god said 'No, we will hide Truth inside the very heart of human beings. In this way, they will look for it all over the Universe, without being aware of having it inside themselves all the time' (Ferrucci 1982 p.143).

The ontological question 'what is the nature of reality?' and the epistomological questions 'what is the nature of human knowledge, from where does it originate and what limits it?' are central to philosophical arguments surrounding truth. Differences in the beliefs about the best answers to these questions have given rise to significant schools of thought, each of which has contributed to the shaping of human knowledge and to the ways in which truth is understood. The resulting paradigms each provide a perspective, or lens through which the complex nature of the world can be understood (Lincoln & Guba 1985). In turn, these world-views have shaped the projects of academic disciplines. This can be seen at even the most fundamental level, the natural sciences seeking to explain, the social sciences striving to understand (Hekman 1990).

The conceptualisation of truth is central to the philosophical paradigms that have guided the thoughts of humankind, but the nature of truth is elusive. The earliest formal conceptions of truth are to be found in the Platonic view of the universe as something that could be ordered and thereby understood (Tarnas 1991). The Greek thinkers and their immediate followers were able to see evidence of universal concepts in the seemingly chaotic nature of life. This new way of conceiving truth, no matter how tentative, moved Western thought from mythology towards a more contemporary position. The school of thought which has dominated the search for

truth in recent times, and which has provided the backdrop against which all paradigms in this period have been considered, is logical positivism.

The dominance of this paradigm holds significance for OR nursing. It is this paradigm that underpins the drive to reduce the activities of OR nurses to discrete tasks and skills and it is the paradigm upon which a great deal of the existing research and literature surrounding OR nursing is based. The propensity to adopt a logical positivist approach when exploring the field of OR nursing is not unique to the area but reflects the progress of developing nursing knowledge.

Until the 1960s nursing was dominated by traditional science through the biomedical model. The wide social acceptance of the traditional scientific methods provided a compelling reason for its adoption by nursing scholars. To enable nursing to be granted professional status, nurses felt it necessary to appropriate the dominant paradigm of the medical profession and the type of knowledge that emanated from it (Street 1992). The outcomes of scholarly inquiry grounded in this paradigm have formed the backbone of accepted nursing knowledge, the practical consequence of which is that research into nursing phenomena has been, to date, mainly quantitative in nature. This is clearly evident in the reductionist view of OR nursing that is evident in the literature.

Nursing, at every level, encompasses human experience. It is characterised by an ability to work with the complexities of humans and their health needs, to share interpretations with a person about how they are affected by their health experience and to make meaning from these interpretations which assist in the provision of sensitive nursing care. Such notions as caring, holism and meaning are fundamental to nursing and nurses, and are central concerns of nursing research. Dahlberg & Drew (1997) highlight the complex, intersubjective and meaningful ontology of nursing. They argue that nursing has a holistic ontology and that research around meaning is the primary epistemological project of nursing. The interpretive (constructivist/naturalist) paradigm is typically concerned with the meanings that are given to social situations by the people within them (Ford-Gilboe, Campbell &

Berman 1995). The qualitative research methods that have emanated from this paradigm appeal to nurses because they reflect the experience of nursing practice (Oiler Boyd 1993). They therefore hold appeal for this study as it explores the everyday world of operating room nurses and does so from the nurses' perspective. While the ontology of logical positivism is realist and its epistemology is objective, the ontology of the interpretive paradigm is relative and its epistemology is interactive (Guba & Lincoln 1989). Understanding and inquiry are construed as bound by time, value and context. The existence of multiple, holistic and constructed realities is accepted (Lincoln & Guba 1985). The researcher and those being researched are equal participants in the creation of shared meanings. Therefore the paradigm is well suited to meeting the purpose and aims of this study. This study therefore represented a significant departure from the reductionist (and hitherto accepted) ways of understanding OR nursing in which the nursing work has been steadily reduced to an oversimplified set of tasks. It responded to the urgent need to gain a new perspective on the nursing contribution in the operating room.

Focusing on operating room nurses the study sought to uncover the tacit knowledge that the nurses use to develop and shape their reality, values and practices. The central assumption of the study is that nursing is a cultural and culturally constituted activity (DeSantis 1994). Culture is central to the way in which people act and make sense of the world. Leininger defines culture as the '... learned, shared and transmitted values, beliefs, norms and lifeway practices of a particular group that guides thinking, decision and actions in patterned ways' (Leininger 1985 p.209). The research purpose was therefore both ontological and epistemological. That is, it addressed ontological questions that explored meaning in the every day world of operating room nursing and the epistemological questions that considered the nature, origins and limitations of nursing knowledge in the operating room. A methodology drawn from the interpretive paradigm was therefore well suited to achieving the study's intent.

The study methodology

The methodological foundation of this study combined nursing, ethnography and philosophical hermeneutics. While nursing provided the focus, hermeneutic

ethnography determined the type of questions asked, the way the research was conducted, the type of data collected and the nature of the findings (Koch 1996). It also defined the relationship between the researcher and the participants. In turn, this methodology was chosen because of its suitability to the area of inquiry and the type of understanding sought. As an interpretive account of cultural aspects of nursing in the operating room, the study emphasises human interpretation of experiences utilising tacit knowledge. The outcome of the study was not the 'truth', although the interpretations are truthful. They reflect the subjective negotiations between the researcher and participants.

Ethnography

Ethnography is, as Werner & Schoepfle (1987 p.42) put it '...the study of ethnocentrism' of the inhabitants of that particular culture. The term 'ethnography' is derived from the Greek *ethnos* meaning people, race or cultural group, and *graphikos* (Greek) or *graphicus* (Latin) to write (Vidich & Lyman 1994 and Hayward & Sparks 1988). It is, therefore, a constructed story of a people. It is both a product and a process (deLaine 1997) utilising a combination of research methods including participant observation, ethnographic interviewing, field noting and reflective journaling to create an authentic, illuminating and engaging account of a cultural group. It is concerned with exploring and representing cultural behaviour (what people do), knowledge (what people know) and artefacts (what sort of things people make and use). Ethnography generates both grounded and abstract theories, providing in-depth, holistic and contextualised cultural accounts that provide insight into poorly understood areas (Leininger 1985) and is therefore appropriate to this study.

Ethnography has a long history. Wax (1971) notes that Herodotus in the 5th Century B.C. wrote accounts of Persians and Scythians for his Hellenic readers. The Roman Tacitus (37-95 A.D.) wrote about the culture of the Teutonic tribes and the Chinese Buddhist Fa-Hsien wrote about India in the 5th Century A.D (Wax 1971). In the middle of the 13th Century the Europeans (through the Catholic missionaries) began to collect material on foreign people. The discovery of non-Western people in the 15th century (by non-missionaries) invested the post-Renaissance Europeans with a

desire to understand foreign cultures (Vidich & Lyman 1994). This was not a benign understanding sought to expand knowledge for its own sake, but an understanding that was gained in order to conquer and/or exploit that population for imperial benefit.

Classic 20th Century ethnographic works, such as those of Malinowski and Mead, still display elements of the empirial origins of ethnography (Denzin & Lincoln 1994) but movement towards a contemporary understanding is evident. Malinowski's ground breaking work on the importance of observation in the field, published in *Argonauts of the Western Pacific*, revolutionised ethnography in the 1920s shifting it from an academic, book based pursuit to active field-based research. The publication of his diary, (posthumously) in 1967, provides valuable insight into some of the more bitter realities of conducting fieldwork, and is an instructive contrast to his more idealistic writing in *Argonauts*.

The reasons for engaging in ethnography became more diverse (and in many cases, more benign) as the 20th century progressed, giving rise to three main forms of ethnography. Descriptive ethnography incorporates the traditional and structural forms. The traditional form of descriptive ethnography aims to provide a comprehensive, descriptive account of the culture, while the structural form seeks to discover, through semantic analysis, the cognitive maps that will explain the culture. Interpretive ethnography, which includes hermeneutic ethnography, attempts to discover the meanings of observed social action, representing them through thick description. It is descended from the sociological work of Max Weber. Critical ethnography includes the postmodernist and feminist genres in which inquiry focuses on rhetoric and exploitation and is conducted for the purposes of empowerment and emancipation of the participants (deLaine 1997). These three types of ethnography have their foundations in anthropology (Muecke 1994).

Denzin (1997) provides an alternative description of ethnography. He describes the development of 20th Century ethnography as moving through six distinct phases that transformed it from an objective pursuit to one in which the researcher could be

accepted as a subject of the study. These phases are the traditional (1900-WWII), modernist (WWII – 1970s), blurred genre (1970-86), crisis of representation (1986-present) and the fifth moment (now) before reaching what he terms ethnography's 6th moment (p. xi-xii) which, although yet undefined, he believes is the new ethnography for the 21st Century. In this chapter the longer established definitions discussed in the previous paragraph guide the discussion of ethnography.

The health professions including nursing have adopted ethnography as a way of understanding particular areas and new forms of ethnography have developed to meet this need. Overall these ethnographies have been constructed from short forays into the field and tend to be of a smaller scale than the large anthropological ethnographies. A number of terms are in common use for these types of studies including 'focused', 'mini' and 'micro' ethnography (Leininger 1985; Morse 1991 and deLaine 1997). All these denote studies that explore small communities, for example a hospital ward. Their characteristics include limited fieldwork, a small number of key informants involved in small numbers of interviews on an informal and/or semi-structured basis. Although no standard ethnography exists and new forms continue to evolve (Muecke 1994) the ethnographic project remains the representation of a people within a culture. As a discrete area within a hospital the operating department represents a culture that is appropriate to explore using ethnographic methods.

Ethnography operates from several basic axiomatic premises. The first premise is that while much cultural knowledge is tacit, it is fundamental to the way experiences are interpreted and the way behaviour is generated. The second premise holds that members of the culture share belief and meaning systems. The third premise suggests that by exploring the shared belief systems of individuals and groups within the culture, cultural knowledge can be uncovered and translated (Maggs-Rapport 2000). Additionally two levels of cultural knowledge exist and must be accounted for. These are, according to Spradley (1980) the explicit culture (what is known and communicated) and the tacit culture (the silent, hidden dimension of knowledge that moderates behaviour and the interpretation of experience). Because cultural knowledge can be inferred rather than observed directly, the ethnographer must

observe what people do and listen to what they say. It is this combination that enables the researcher to discover and interpret the tacit knowledge embedded in a culture. In the OR the explicit culture is already documented in the form of task descriptions. It is the tacit knowledge that this study sought to uncover.

Clifford Geertz

This study draws upon the work of Clifford Geertz to provide the ethnographic component of its methodology. Geertz (1926-present) is a social anthropological ethnographer. He has undertaken numerous ethnographic studies in particular concerned with various Javanese groups. In latter years he has become a hermeneutic ethnographer. Geertz's theoretical standpoint presents something of an amalgam of influences. Indeed in his address to the American Council of Learned Societies Geertz alludes to his 'improvised life' (Geertz 1999). In his early work Geertz (then thinking in terms of cognitive anthropology) was influenced by the work of Max Weber who Austin-Broos (1987) argues contributed the idea that a '... causal and comparative account of culture could be achieved through the incorporation of meaningful phenomena' (p.142). Ryle and Wittgenstein contributed to his conception of culture and the way it could be understood (Austin-Broos 1987), moving him away from the cognitive and cultural anthropology which was the dominant discourse at the time towards a social understanding of the field. Wittgenstein's work is the key to Geertz' historicism. He subsequently moved to a hermeneutic approach in development of which he was strongly influenced by the philosopher Suzanne Langer, author of *Philosophy in a New Key* and her aesthetic view of the world (Langer 1957). Her work in symbols assisted Geertz to develop his arguments that systems of meaning, which are symbolic, are critically important to the understanding of culture. Dilthey also played a role in shaping Geertz's work by stressing the importance of understanding individuals and the interconnectedness of their lives with their culture. It is here that the importance of analysing culture and its members in their own terms is acknowledged and a strong link with Gadamerian hermeneutics is made. Geertz' general thrust as a social anthropologist can be seen in his statement that '... it is through social action that cultural forms find articulation' (Geertz 1973 p.17). Consequently ethnography, when informed by Geertz, involves

47

long periods in the field observing the ordinary, everyday lives of the people within the culture. This is reflected in the research methods for this study.

In relation to nursing, clinicians may not be in the best position to recognise the tacit cultural knowledge upon which they base their actions (Meerabeau 1991). Therefore research in practice is based on collaboration between researcher and clinician, placing them on an equal footing and protecting the participants from exploitation (Meerabeau 1991). Ethnography is well suited to this end. It enables researchers to uncover the attitudes, beliefs and culturally derived meanings that underpin cultural patterns, including rules, routines and rituals, which hold significance for nurses and nursing practice (Aamodt 1991). These findings in turn augment the body of knowledge that enables nurses to understand the meanings of experiences that are related to nursing, health and illness. Ethnography cannot, however, be used indiscriminately in the pursuit of culturally focused nursing phenomena. Van Maanen (1988) emphasises the moral responsibility of the researcher to the participants and reflects the criticisms that have been leveled at ethnography. Critique centres upon the issue of representation with particular reference to subjectivity, the role of the researcher in the field and the authority of the author. This critique will now be addressed.

Ethnographers ask 'what do these people see themselves as doing?' rather than 'what do I see?' (Spradley & McCurdy 1972 p.9). In order to answer this and to understand cultural patterns it is essential for the researcher to observe actively in the field and communicate openly with participants (Schutz 1994). This contributes to the development of a trusting relationship between researcher and participants that in turn allows the researcher to enter the hidden culture (Leininger 1985). The presence of the researcher in the field confers authority upon field-based research (Purkis 1994). The lengthy periods of observation sensitise researchers to the culture and furnish them with large quantities of data upon which to base their interpretations. As stated earlier in this chapter Malinowski was the first ethnographer to emphasise the importance of intensive fieldwork and as such was the first ethnographer to seriously acknowledge the moral issue of cultural representation. As a functionalist

drawing simultaneously upon principles of holism and positivism, Malinowski instigated empirical social anthropology[6] and moved anthropology away from the hierarchical structure of researcher and 'subject', promoting equality between (in his case) races. Nonetheless his manner of conducting fieldwork exhibits exploitative rather than the reflexive and morally sensitive elements of contemporary ethnography.

Subjectivity of the researcher is an essential part of ethnography providing the lens through which the culture being explored can be interpreted. It is the vehicle upon which the text produced from fieldwork can be brought to life (Schutz 1994). The impossibility of remaining separate from the social world while at the same time studying it is recognised (Spradley 1980; Doyal & Harris 1986 and Hammersley & Atkinson 1995). The desirability of remaining objective in this type of research is counterproductive as truly rigorous inquiry must be true to its philosophical assumptions (Sandelowski 1993). Ethnographers must rigorously address the impact that their beliefs and values have upon the interpretation of the culture. This contributes to the credibility and trustworthiness of their research (Koch 1994). The discipline involved in doing this also prepares researchers for the complexity of the culture and the coexistence of many possible interpretations.

The issue of authority and representation is addressed through the inclusion of the participants' voices in the final ethnographic account. While the moral responsibility to present their words in context rests with the researcher, the reader has the opportunity to engage with the participants (Koch 1996). Inclusion acknowledges that participants are not passive in the research process, but actively engage in interpretation and the creation of meaning that are integral to the study (Lincoln & Guba 1985). Therefore, for the final ethnographic account to have authority and authenticity, the voices of the participants must be included. For this reason the

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[6] Social anthropology according to Smelser (1992) is the same as cultural anthropology, the project of which is the analysis and conceptualisation of culture. Sperber (1996) concurs arguing that there is no difference between the terms social and cultural.

voices and actions of the participants in this study are included in the form of interview and field note extracts.

In this light, and for the purposes of this study, ethnography is a hermeneutic enterprise. Hermeneutic ethnography draws upon philosophical hermeneutics. The researcher and the participants enter into a partnership to which they each bring their prejudices and understandings. Through dialogue with each other and engagement within a hermeneutic circle they move towards a fusion of horizons, and thus new ways of understanding the participants' world are uncovered. The hermeneutics of Hans-Georg Gadamer provided the philosophical foundations for this study. An exploration of Gadamerian hermeneutics is therefore provided.

Hermeneutics

> *Hermeneutics is an art and not a mechanical process. Thus it brings its work, understanding, to completion like a work of art* (Gadamer 1975 p.191).

Hermes, son of Zeus and Maia, messenger and herald of the gods, thief, liar and inventor, gave his name through the interceding *hermeneia* (interpretation) to hermeneutics. As the god of eloquence and games of chance and with a singular turn for mischief, Hermes' character and abilities reflect the nature of truth and its interpretation. He is attributed with inventing the alphabet and the lyre (Moncrieff 1918), creations that resonate easily with the linguistic and artistic nature of hermeneutic inquiry. In Roman mythology Hermes is known as Mercury whose mercurial nature and inherent light heartedness are characteristics well suited to interpreting and understanding reality. Ironically Hermes' nature also highlights the hazards that accompany interpretation.

The hermeneutic ethnographer is in a position of authority and is the single conduit between the participants and the reader. Thus the ethnographer has the greatest authority over the text and must therefore accept the greatest share of the moral responsibility for its representativeness. Hermes' talents for theft and misrepresenting the truth are potentially reproduced in ethnographic studies. The possibility of engaging in cultural theft and of misrepresenting the culture exists and

must be rigorously addressed. Interpretation is also something of a gamble, a game of chance, in that it is not possible to see every aspect of the culture being explored and therefore inadvertent misrepresentation may occur. This too must be meticulously addressed through the conduct and documentation of the fieldwork.

The possibility for making mischief is always present in ethnography and sound preparation must be made to ensure that when the participants are confronted by the once tacit aspects of their world, they are not left unsupported and in a damaged state. In this, the optimistic and constructive tenor of Gadamerian philosophical hermeneutics can form the basis of a research strategy that is inclusive, non-judgemental and supportive of the participants (Caputo 1987). While Caputo considers that Gadamer does not go far enough into the more suspicious side of Heideggerian Hermeneutics Gadamer, in his interview with Ron Boyne, rejects deconstruction viewing it as a 'literary game' that has no place in respect of 'our human, religious, moral interests and demands' (Boyne 1988). Finally the mercurial nature of reality and truth must be acknowledged in a study that has its foundations in hermeneutic philosophy. It is not possible to reach absolute closure as hermeneutic interpretation is always in progress (Annells 1996). This must be evident in the final text. The inevitable consequence of this is that the final work will not be definitive. As Gadamer states '... science may produce experts, hermeneutics does not' (Boyne 1988 p.30) therefore a study which is true to the hermeneutic project must reflect this. This study is concerned with the hermeneutic project. Thus it seeks to gain understanding which, according to Gadamer (1975), occurs only when there is harmony between all the details and the whole. This is the endpoint that a hermeneutic study, and therefore this study, strives to achieve.

The development of hermeneutic philosophy
Contemporary hermeneutics is a philosophy that is concerned with how people experience understanding and interpretation (Thompson 1990). It originated with Schleiermacher who introduced hermeneutics as a way of gaining philological understanding of theological texts (Cushing 1994). From this beginning two main schools of contemporary hermeneutics were established. The earlier 'objective validation hermeneutics' was subscribed to by Dilthey and Hirsch conceptualised

hermeneutics meaning as a 'determinate, object-like entity' that is discoverable in a text, a culture or in a person's mind (Schwandt 1994). According to Dilthey hermeneutics was formed from the relationship between lived experience, expression and understanding (Ormiston & Schrift 1990). His expanded conception of hermeneutics included historical background, social customs and cultural and political institutions. This provided an epistemological map for understanding human activities. The subsequent transformation from epistemological to ontological hermeneutics occurred through Husserl and then Heidegger (Cushing 1994).

Husserl, as a mathematician recognised the need to move away from traditional scientific ways of generating knowledge (Husserl 1917). While conceiving a phenomenological method, he maintained the importance of traditional structures of inquiry such as objectivity giving rise to such notions as bracketing and phenomenological reduction (Spiegelberg 1982). Heidegger rejected the 'man-centredness' [sic] of the modern world, the notion of the known object and knowing subject and the privileged stand point of the person as the knowing subject. Instead he understood truth as uncoveredness or unhiddenness (Heidegger 1962 and Hekman 1990) and the reductive Husserlian concepts (such as bracketing) were rejected. The ontological hermeneutic philosophy conceived by Heidegger and adapted by Gadamer considers all human existence to be hermeneutic. That is a reciprocal relationship exists between humans and meaning (Hekman 1990). The works of both Heidegger and Gadamer suggest that, as understanding is a type of Being, it equals existence (Heidegger 1962, Gadamer 1975, Koch 1996 and Madison 1988). Therefore the scope of hermeneutics is universal, a point that has particular importance to this study in which the nurses have a reciprocal relationship with the operating room culture and shared meaning exists.

Gadamer considers hermeneutics to be the foundation of philosophy rather than method stating that 'hermeneutics is the renewal of practical philosophy. The whole concept of practice has been distorted by the modern concept of theory, of theory as an instrument for explaining reality' (Boyne 1988 p.29). Strongly influenced by the

work of Heidegger, Gadamer also drew upon the work of Max Weber[7] who was a key figure early in Gadamer's life (Boyne 1988). Gadamer's version of hermeneutics, thus influenced by Heidegger and Weber, is concerned with the conditions for understanding, interpretation and meaning. It therefore lends itself to the interpretive endeavours of such disciplines as anthropology and nursing (Allwood 1989). The emphasis on humans rather than on science (Boyne 1988 p.31) compounds the usefulness of hermeneutics to these disciplines and to this study.

Gadamer's philosophy is based on the linguistic and universal nature of understanding (Hekman 1990) and the contextual, historical and social nature of knowledge (Hekman 1990 and Thompson 1990). In *Truth and Method*, Gadamer devotes Part Three to the importance of Language. He argues that humans have a linguistic tradition and that language is the medium for understanding. Language, he believes, can be detached from the speaker and written to form text that can then be interpreted to find hidden meaning. He considers this transformation to be the true hermeneutic task. Therefore in hermeneutic inquiry words belong to a situation rather than to a person and the inquirer searches for what the words say about the particular context. The search for meaning is constructed as dialectic, an ongoing structure of questions and answers which aim to more fully open up the text for interpretation. Hermeneutic inquiry, and the dialogue with the text are based around the hermeneutic constructs (the metaphors for understanding) – the hermeneutic circle and the fusion of horizons (Koch 1996). The concepts of prejudice and play are also fundamental to hermeneutic analysis and therefore to this study.

The hermeneutic circle

The hermeneutic circle was developed by Gadamer from the work of Martin Heidegger and describes the dialectical movement between the whole contextualised experience to the part and back again. It is by invoking the hermeneutic circle that the hermeneutic rule to understand the whole in terms of the detail and the detail in terms of the whole can be realised (Gadamer 1975). The inquirer can then move

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[7] While influenced by Weber, Gadamer also rejected much of his work including its rationalist, value free basis (Gadamer 1975).

towards holism (Bohman et.al. 1991). The circle constantly expands and further contexts can be integrated that will effect understanding (Gadamer 1975). Both history and language are implicit within the circle and keep the dialogue open to questions and answers. This enables the inquirer to gain different answers (perspectives) depending on the type of questions asked. The hermeneutic circle enables the inquirer to openly acknowledge that interpretation is cyclical, characteristically uncertain and is profoundly influenced by the interpreter's perspective (Bohman 1991). In this, Gadamer's inclusion of the interpreter as part of the hermeneutic circle is a significant departure from Husserlian bracketing and re-emphasises the essential role of the inquirer in the creation of meaning. The engagement with the hermeneutic circle in this study is addressed in the research methods.

Fusion of horizons

A horizon encompasses, according to Gadamer, everything that can be seen from a particular vantage point. The implication of this is that if the vantage point is changed, then so to, the view will change and different perspectives will be gained. As Gadamer writes '...a horizon is not a rigid boundary but something that moves with one and invites one to advance further' (Gadamer 1975 p.245). He believes that understanding comes from the fusion of the author's horizon with the interpreter's horizon (Hekman 1990). Thus it is the fusion (rather than the interpreter) that is central to the inquiry. The hermeneutic task does not seek to assimilate horizons but consciously brings out the tension between horizons (Mueller-Vollmer 1994). As Gadamer states 'hermeneutic work is based on a polarity of familiarity and strangeness ... *the true locus of hermeneutics is this in-between*' (Gadamer 1975 p.295 original emphasis). It is through exploring these tensions that true fusion of horizons can occur. The horizons and their application to this study are presented in the research methods section of this thesis.

Prejudice

A further important construct of Gadamer's work is that of prejudice. Prejudice, in Gadamer's sense is '... a judgment that is rendered before all the elements that determine a situation have finally been examined' (Gadamer 1975 p.270). In this

54

sense it holds none of the contemporary negative connotations. Instead 'prejudice' with its original neutral definition, is seen as integral to interpretation (Allwood 1989). By acknowledging prejudice the inquirer recognises the impact that history has on the way in which people experience existence, and is therefore a condition of knowledge. Prejudices, which are socially constructed, provide the filters through which people experience and understand the world (Koch 1996). By advocating prejudice Gadamer acknowledges the need for critique and self-understanding (Hekman 1990). They make up the historical reality of the person and are fundamental to the process of understanding (Gadamer 1975). He states:

> In fact history does not belong to us; we belong to it. Long before we understand ourselves through the process of self-examination, we understand ourselves in a self-evident way in the family, society, and state in which we live. The focus of subjectivity is a distorting mirror. The self-awareness of the individual is only a flickering in the closed circuits of historical life. That is why the prejudices of the individual, far more than his judgments, constitute the historical reality of his being (Gadamer 1975 p.277).

In Gadamerian hermeneutics it is not possible to be a detached observer as the person is viewed as inseparable from his or her prejudices. Uncovering and foregrounding prejudice is an integral part of understanding (Gadamer 1975). For this reason research methods that provided the processes to enable the recognition and exploration of prejudices were employed. These are discussed in the research methods.

Play

It is essential in hermeneutic inquiry to be able to enter and then act within the hermeneutic circle. Play is the metaphor that Gadamer used to describe this interaction. He considered himself to be a player stating that:

> Play fulfils its purpose only if the player loses himself in play. Seriousness is not merely something that calls us away from play; rather seriousness in playing is necessary to make the play wholly play (Gadamer 1975 p.102).

The way in which Gadamer constructs play reflects the to-and-fro motion intrinsic to it and to the interpretation of text. It is with this motion and complete immersion (through playing) within the circle that hermeneutic analysis can be brought to

55

fruition (Gadamer 1975). Walsh (1996) notes that by invoking the metaphor of play, inquirers can avoid becoming embroiled in the arguments surrounding subject-object distinction and define themselves and others as players. This was important to the relationship between the researcher and the participants as a collaborative, rather than hierarchical, relationship was sought.

Through these four structures hermeneutic philosophy supports research inquiry into contextualised meaning and understanding (Thompson 1990). Because of this hermeneutics has had a fundamental impact upon phenomenological and ethnographic research. Kellett (1997) argues that hermeneutical analysis (in this instance Heideggerian) makes it possible to gain in-depth insight into people's everyday life experiences. This is also the major project of ethnography and hence this study. The complexity and interconnectedness of the data that confronts ethnographers must somehow be rendered understandable (Geertz 1973). Entry into and effective comportment within the hermeneutic circle is powerful way of accomplishing this understanding.

Hermeneutic ethnography

There are strong links between ethnography and hermeneutics. Geertz (1973) defended anthropology (and hence ethnography) as an interpretive discipline. Ethnography in the classical or structural modes runs the risk of ontological barrenness as it seeks to describe in concrete terms the day-to-day lives of people within a culture. Meshing a hermeneutic approach to the more traditional ethnographic approach invites a more ontological exploration. The adoption of a hermeneutic approach is also supported by the lack of clarity surrounding the day-to-day lives of, in the case of this study, OR nurses (Schutz 1994). Developmental, philosophical, process and project links exist between hermeneutics and ethnography. The illustrations of the links presented here are drawn from Geertzian ethnography and Gadamerian hermeneutics because they are the principal methodological influences in this study.

Gadamer had a significant effect on the way in which Clifford Geertz developed his views on ethnography (Allwood 1989). Investigating the conditions for understanding and meaning is central to anthropological and hermeneutic thinking.

Geertz advocates an interpretive approach to anthropology, the product of which is 'thick description' a term first used by Gilbert Ryle (Ryle 1968) to describe the fixing of transient occurrences into text. Once rendered into concrete but richly descriptive text, these observed, complex, cultural processes (social action) can then be subjected to hermeneutic analysis. Thus social action becomes text that can be searched and re-searched for possible meanings. The ability of written text to allow the past and the present to co-exist, thus providing opportunity to gain deeper and richer understanding is noted by Gadamer (1975). Through interpretation of text hermeneutic ethnographers can understand the meaning structures of individuals in terms of '... social order, historical change and psychic functioning' (Allwood 1989 p.311). It is therefore clear that both Gadamer and Geertz extend the interpretive task beyond the consciously held meaning structures (Allwood 1989) and are interested in tacit understanding. This extends to a recognition of the importance of preunderstanding on the part of the interpreter which implies that the researcher in the anthropological context must develop self awareness of personally held tacit understandings (preunderstandings), how these may differ from other peoples (Allwood 1989) and their impact on interpretation. Again the processes used to achieve this are addressed in the research methods.

Dilthey's interest in historicity and his dedication to the natural sciences, especially to anthropology, have had impact upon the works of both Geertz and Gadamer. His influence can be seen in the assertion made by Gadamer that '... a text must be understood in its own terms' (Gadamer 1975 p.291) and in Geertz' belief that 'the culture of people is an ensemble of texts' (Geertz 1993 p.452). The opposing projects of the natural and human sciences (explanation versus understanding) first recognised by Dilthey (Rogers 1994) is reflected in Geertz's statement that:

> Cultural analysis is (or should be) guessing at meanings, assessing the guesses, and drawing explanatory conclusions from the better guesses, not discovering the Continent of Meaning and mapping out its bodiless landscape (Geertz 1973/93 p.20).

It is a foundational principle of the holistic thrust of Gadamerian hermeneutic philosophy and its search for understanding (Gadamer 1989 and Boyne 1988). It is also the underlying principle for this study. The 'bodiless landscape' of operating

room nursing has already been mapped. This study strives to achieve insight into the nurses' world, in order to gain new perspectives and alternative ways of understanding it.

The significance of Max Weber to both Gadamer and Geertz has already been noted. The reciprocal relationship that human's have with culture, the universality of experience and the creation of shared meaning is noted in both works (Annells 1996; Geertz 1993 and Gadamer 1975). Wittgenstein's influence is also detectable in the strong emphasis both authors place on the importance of context, shared meaning and the public nature of language (Doyal & Harris 1986 and Beck 1975). While knowledge is a matter of context and perspective (Johnson 1991) language is the maker and communicator of meaning. It is the crux of interpretation (Lincoln & Guba 1985) in both hermeneutic and ethnographic inquiry. It is the chief reason that verbatim interview transcripts and thick description of social action are employed in this study. Gadamer (1975) notes the significance of Wittgenstein's insight into the importance of language for mutual understanding, noting that language is like a game. This game is played within the hermeneutic circle, in which the whole and the part are both given meaning through the 'dialectical interaction' between them (Thompson 1990). The heart of the hermeneutic problem lies in understanding the relationship between the universal and the particular (Gadamer 1975). This problem lies at the heart of the ethnographic project, which is to make sense of the reciprocal relationship between social action and culture (Geertz 1973/93). Geertz is, according to Cottom (1989 p.55) '... explicitly dedicated to the interpretation of culture as a hermeneutic circle.'

Summary of the research methodology

Hermeneutic ethnography provides an optimistic interpretive foundation upon which to base this study. Ethnography provides the methods for doing the study and the cultural perspective. Hermeneutics provides the lens through which understanding is achieved.

The choice of the research methodology reflects the belief that a holistic and socially aware theoretical structure is more likely to be able to represent the complexity and

58

depth of meaning within human experience. Hermeneutic ethnography provides the opportunity to develop knowledge from in-context nursing situations. It is well suited to the exploration of nursing activities as they occur in life as it is lived. The acceptance of multiple realities reflects the human world that nurses inhabit. Within this paradigm the achievement of understanding of what people do requires the adoption of methods that provide access to meanings that inform actions. It supports the holistic and interpretive exploration of nursing and accepts the complex nature of humans and their reality. Hermeneutic ethnography is a methodology that can render the contribution nursing makes to humanity visible. As the purpose of this study was to explore nursing in the operating room from a cultural perspective, hermeneutic ethnography offers a solid methodological framework upon which to develop the research methods. In the next chapter the methods chosen match the account of hermeneutic ethnography as it is presented in this chapter.

Research Methods

Introduction

The production of text through observation and ethnographic interview and its concomitant interpretation were the central methods of the study. This chapter is an account of their use and the way in which the research was accomplished. The process of conducting the ethnography is discussed, and the standard ethical procedures, data collection and analysis techniques are explicated. Links are made between the methods and the theoretical underpinnings of the study that explain and emphasise their relevance and usefulness to the research purpose. The final section of the chapter considers the issues of ethnographic authorship and introduces the ethnography.

Fusing philosophical hermeneutics with ethnographic methods

Conducting hermeneutic ethnography demands that the researcher strike a balance between the anti-methodological position of hermeneutic inquiry and the structured methods required when conducting an ethnography. The methods used in the study were germane to this purpose. They provided a pragmatic, workable set of research tools and facilitated engagement with key hermeneutic concepts including the fusion of horizons, the hermeneutic circle, dialogue and prejudice. The work of numerous authors contributed to the development of the research strategy, several had particular significance to the final process and product. Spradley's (1980) highly structured 'Developmental Research Sequence' provided some very practical tools for initial data collection and analysis. While useful at an elementary level, and serving as a guide at the outset of the study, the level of structure in his techniques (particularly those to do with analysis) later constrained both the research activities and the hermeneutic nature of the study. In these matters, and in the area of authorship, Geertz's (1988) work was illuminating. Burgess' (1982) *Field Research: A Sourcebook and Field Manual* with its numerous practical contributions from active ethnographers was an invaluable guide to navigating my way through the

complexities of fieldwork. This was also true of William Foote Whyte (1984), whose inspiring work couples pragmatism with a sense of adventure. Leininger (1985), Sandelowski (1993), Morse (1996) and Field (1991) all provided critical guidance and importantly, did so from a nursing perspective. The works of deLaine (1997) and Roper & Shapira (2000) were useful background reading in determining what a whole ethnographic research process might look like. The arguments surrounding trustworthiness set forth by Lincoln & Guba (1985) and Koch (1996) were central to the manner in which the study was conducted and methodological, analytical and ethical decisions were accounted for.

In *Truth and Method*, Gadamer (1975) discusses six different horizons that are central to hermeneutic inquiry and as such have significance for this ethnography and its methods. When explaining that '... in order to experience the fusion of horizons, one must be able to tolerate the ambiguity of relaxing (not eliminating) one's own preconceptions' Thompson (1990 p.246) reflects Whyte's (1984) assertion that when undertaking ethnography the researcher moves beyond personal knowledge and the frontier that is created by it and explores beyond this. The six horizons proposed by Gadamer are intimately linked to this study.

The Horizon of Understanding is the recognition of possible truth (Gadamer 1975). It is in this horizon that the purpose of the study dwells. The Horizon of Inquiry enables the inquirer to ask the right questions when tradition is encountered (Gadamer 1975) and is the essence of the methods used for data analysis. The Historical Horizon alludes to the background from which the traditional text speaks (Gadamer 1975). The literature review and background reading contribute to this Horizon as, to some extent, do the interview data. The Horizon of the Present that according to Gadamer is in the continual process of being formed is found in the reading and rereading of the text and the ethnographic account. It is here that the text and its meaning takes on a life of its own. The Horizon of the Question, the hermeneutical horizon within which the analytical process of question and answer occurs (Gadamer 1975) is visible in data analysis and its reciprocal relationship with data collection. The final interpretive product of the research, the ethnography,

represents the Horizon of Interpretation that requires the fusion of the other horizons. Gadamer also considers language to be a horizon with which, through dialogue, understanding of the world is gained. The data, in the form of written text, establishes the central nature of language to the project.

Study setting

The study was conducted in one theatre department in a medium sized regional hospital in Launceston, Tasmania. The department conducts between five and six thousand operations per year, and offers surgery in a wide range of areas including gastrointestinal, orthopaedic, obstetrics, gynaecological, faciomaxillary, ear, nose and throat, urology and plastic surgery. It is equipped to provide emergency surgery although some of the most serious cases will be transferred to Tasmania's capital city or to mainland Australia. The department is used for teaching and students from nursing, medicine and the allied health professions are represented amongst those gaining theatre experience. The demographic profile of the non-student staff is presented in Table 2.

Table 2: Staff profile of the study setting

Staff type	Total	Full-time	Part-time
Registered Nurse Level 1 & 2	54	41	13
Registered Nurse Level 3	1	1	0
Enrolled Nurse	1	1	0
Theatre Technician	5	5	0
Hospital Aides	5	2	3
Surgeons	23	N/A	N/A
Anaesthetists	16	N/A	N/A
Registrars	8	8	0
Resident Medical Officers	11	11	0

Ethical considerations

The project proposal was presented to the ethics committees of the University of Adelaide and the participating hospital. Once the study had been approved in both organisations formal contact was made with the Director of Nursing at the hospital

and the project was discussed. The nurses with administrative authority over the surgical area were then contacted. These were the Assistant Directors of Nursing (Surgical, and Management). Following this meetings were held with the nurse in charge of the Operating Rom Suite (ORS). The project proposal was made available to this nurse and to the nursing staff. Meetings were then held with the nurses who would be part of the project. Two introductory meetings (one major and one minor meeting) were held. This was dictated by the accessibility of staff members most of whom were shift workers. During these meetings the project was outlined, its purpose and research design discussed. Agreement was sought from staff for the observational component of the study. The interpretive nature of the project was addressed and its non-judgmental nature was emphasised. The nurses received assurance that their verbal consent to be observed would be sought at each observation and that they had the right to refuse at any time. Information sheets (Appendix II) were distributed at these meetings and were placed on notice boards in the ORS. TORN was also informed of the project's commencement as a matter of courtesy. Subsequently verbal consent was sought from the nurses at each observation. Patients and other staff members in the observation area were also informed about the observation and its focus on the nursing staff. During the course of data collection no one refused to be observed.

Expressions of interest for participants for the interview stage of the research were sought during a work-in-progress meeting and via an information poster that was displayed around the ORS. Selection criteria (discussed under 'Formal interview participants selection) were then applied to those nurses who expressed an interest in being interviewed. Nurses agreeing to participate in the interviews did so on a voluntary basis and gave written consent prior to participating. An information sheet (Appendix III) explaining the study was provided to the participants together with the consent form (Appendix IV). In addition the study was discussed with each participant prior to the interview. The participants on this project remain anonymous through the use of pseudonyms (which they chose at the time of interview) and by masking personal and professional details. Pseudonyms were used during the interviews and further identifying details (such as gender and race) were deleted

from the interview transcripts at the time of transcription. Confidentiality was maintained at all times.

Data, including field notes, interview tapes, transcripts and the research journal, have been kept secured and are accessible only to the researcher, the two PhD supervisors and the participants of the study. In the case of the participants, the field notes were freely available to them throughout the project but individual interview transcripts were only available to the corresponding interviewee.

Fieldwork

> *I pushed open the theatre door and stepped inside reverently, like a tourist entering a cathedral. Standing by the door, my hands clasped tightly behind me, all I wanted was to escape notice. I felt that even my breathing, which sounded in my ears like the bellows of a church organ, would disturb the sterile, noiseless efficiency of the place* (Richard Gordon in *Doctor in the House* 1952 p.64).

Fieldwork receives mixed reviews in the literature. Anthropologist Nigel Barley (1983) in his witty and informative account of ethnographic fieldwork in Africa describes fieldwork as being the process of sifting tons of dirt in order to find an ounce of gold. Shaffir & Stebbins consider fieldwork to be one of '... the more disagreeable activities that humanity has fashioned for itself' (Shaffir & Stebbins 1991 p.1) and Evaneshko (1985) likens fieldwork to an invasion of the culture. Notwithstanding these observations, fieldwork is the central activity of all ethnographers and is done to study life as it is lived. It increases the researcher's understanding of the culture (Spradley & McCurdy 1972 and Field 1991) an understanding partly achieved by observing individuals in groups and the dynamics that exist (Whyte 1984). It is through fieldwork that the taken-for-granted things of the culture become significant (Whyte 1984) the opportunity to expand horizons of understanding presents itself. In order to meet the purpose of this study and conduct its fieldwork a set of standard ethnographic data collection methods was used. These methods were participant observation, field noting, interviewing and the maintenance of a research journal (incorporating reflective journaling and a research log).

In this study fieldwork was conducted between September 1999 and May 2000. Seventy-one visits were made to the departments during this time. Observation sessions in which field notes were made lasted between two and eight hours, and totaled just over two hundred and twenty hours. Eight formal tape-recorded and transcribed interviews with key informants were conducted and numerous solicited and unsolicited informal interviews were made and documented in the field notes. In addition to the four introductory meetings, five work-in-progress meetings were held during this period and many informal discussions with individual staff members on the progress of the study also occurred.

Access

Gaining access to the field is a critical stage in ethnography. This process is multi-layered, complex and involves gaining access to the research site and to the people in it (Burgess 1982). The key people through whom access is granted are termed 'formal' and 'informal gatekeepers' of the culture (Whyte 1984). Permission given by the formal gatekeepers to enter the field provides superficial access and does not necessarily permit the researcher to gain that which Leininger (1985) terms the 'backstage'. This is where the she believes the real culture resides arguing that gaining the willing acceptance of its members is necessary in order to see the façade-free culture.

In this study the enthusiasm expressed by the formal gatekeepers of the theatre (the managers and DON) not only assisted entry into the culture but positively influenced access into the field. This in turn profoundly influenced the quality of the data .The introductory meetings and individual discussions held with RN staff also contributed to gaining a deeper level of access into the field.

Work-in-progress meetings were held throughout the study. Current progress (such as field notes, preliminary analysis, ideas) was discussed and the nurses were encouraged to ask questions, during and after the meeting. Researcher contact details were available on the information sheet provided. No one utilised this formal channel of communication but took the opportunity to discuss the project on an adhoc basis during and after observations. Questions were typically about the length

of time the fieldwork would continue and about the nature of the findings. On occasion it was apparent that the nurse has been concerned that the OR was being evaluated. This concern was addressed promptly with the individual nurse and on two occasions meetings were held with the staff specifically to reiterate the purpose of the project and allay any concerns that the project was evaluative.

Gaining access to the operating room itself was complicated by the expectation of some nursing staff that permission to observe should be sought from the surgeons (but not the anaesthetists) even though the nurses, the focus of the observation, had consented. In order to address this issue all people within the operating room were given a brief overview of the study purpose and the opportunity to ask questions.

The process of maintaining access was ongoing as there were constant fluctuations in the degree of access granted. This is not unique to the operating room. Hammersley & Atkinson (1995) in their discussion of fieldwork in general, note the changeable nature of access and the need to engage in ongoing negotiations to maintain it. Once again discussions with individuals and willingness to answer questions honestly were instrumental in maintaining access and enabling participant observation to commence. The prolonged length of time spent in the theatres also contributed favourably to maintaining access and is an important strategy in participant observation.

Participant observation

> *The necessary knowledge is that of what to observe. Our player confines himself not at all; nor, because the game is the object, does he reject deductions from things external to the game*
> (Edgar Allan Poe in *The Murders in the Rue Morgue* 1909 p.164).

The researcher is the primary data collection instrument in ethnographic research conducting observations by employing participant observation techniques (Burgess 1982). Participant observation is a broad term that embraces the various combinations of participation and observation that occur in ethnographic research (Gans 1982). Four main types of participant observation are noted in the literature. These are the complete observer, observer as participant, participant as observer and

66

complete participant. All the participant observer roles may be used in one piece of fieldwork as the researcher learns to be flexible (Burgess 1982 and Whyte 1984). The predominant role in this research was that of observer as participant. This role placed the emphasis firmly on observation (the principal object), but maintained the flexibility to participate in ways that assisted the maintenance of access. Combining a minimal level of clinical participation with a high level of observation also emphasised the research basis of the relationship between researcher and participants (Burgess 1982). It de-emphasised the clinical relationship.

In order to structure and conduct observations a standard format of activities was adhered to throughout data collection. These are shown in Figure 1. A sequence of increasingly focused observations was made using this process. The first set of observations in the sequence was broad. Spradley (1980) terms these as 'grand tour' observations. Driven by the question 'what is going on here?' these observations captured large, unfocused chunks of the culture. Their analysis led to a series of observations that focused on the broad categories obtained through analysis of the 'grand tour' data. 'Focused' observations (Spradley 1980), the second type of observations in the sequence, established a large amount of in-depth data in a range of specific areas identified through these broad categories. Analysis of this data in conjunction with the interview data enabled highly focused observations to be made. These observations, which Spradley terms 'selective observations', were the final set in the sequence. They generated rich, in-depth data. This enabled thick descriptions of the culture to be made.

Interviews

Interviews were intimately linked to the observation and formed part of the fieldwork. Both formal and informal interviews were used to clarify, supplement and validate observations and the interpretations made during preliminary analysis of fieldwork (Roper & Shapira 2000). While participant observation focused on the *what, when, where, who and who with,* the interviews sought the meaning of what had been observed and so added a new dimension, the *why* (Lofland & Lofland 1984). This overt inclusion of the participants' views of their culture is a distinguishing feature of ethnography (Hammersley & Atkinson 1995).

Figure1. Structured observation process

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┌─────────────────────────────────────────────────────────────┐
│                      GAINING ACCESS                          │
│                 Contact theatre to check lists               │
│                   Change into theatre wear                   │
│                  Talk with staff in the tearoom              │
│      Check lists and any special concerns (eg. 'closed' theatres[8]) │
│    Observe theatre through theatre window to check layout and activity │
│          Enter theatre via anaesthetic room and greet scout  │
│          Gain permission to observe from nurses and others   │
└─────────────────────────────────────────────────────────────┘
                              ⇩
┌─────────────────────────────────────────────────────────────┐
│                       OBSERVATION                            │
│               Broad observation of nursing activity          │
│                                                              │
│                   Choose observation position                │
│                     Focusing observation                     │
│                       Questions to staff                     │
│                                                              │
└─────────────────────────────────────────────────────────────┘
                              ⇩
┌─────────────────────────────────────────────────────────────┐
│                   OBSERVATION CLOSURE                        │
│                   Thank nurses and others                    │
│             Talk with nursing staff in the department        │
│                   Change out of theatre wear                 │
│                   Leave to write up brief notes              │
└─────────────────────────────────────────────────────────────┘
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Participant selection for formal interviews

Selection of participants for the interviews was based upon the principles of identifying good key informants. Working with people who are excellent key informants is integral to strong ethnographic fieldwork (Spradley & McCurdy 1972

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[8] A closed theatre indicates that no one may enter the theatre during the operation. The reduced traffic flow is usually in response to an operation with a higher than normal risk of infection, such as a joint replacement.

p.41). In identifying potential key informants the following characteristics were given consideration:

- willingness to share information;
- ability to provide detailed experience based information;
- ability to provide concrete description without interpretation;
- level of exposure to the culture, and
- ability to communicate the knowledge in layman's terms (Morse 1991 and Spradley & McCurdy 1972).

In addition, interview participants had to be practicing nurses in the study setting and be engaged in patient care within the operating room. They had to speak English and have expressed a desire to participate in the research project. A number of nurses expressed the desire to be interviewed but did not meet the selection criteria. Their insights were captured through informal interviews during observations. The RNs who were interviewed represented a broad range of experience to the area, from relatively new to extremely experienced. They each chose a pseudonym to be used in the study. The pseudonyms are Rose, Winnie, Lee, Barry, Robin, Anne, Penny and Jill. Because ethnography is not concerned with individuals, no further introduction will be made to these nurses who represent their cultural group.

Formal interview format

Eight formal interviews were conducted. Each formal interview took at least one hour to complete with the longest interview taking two hours. Tapes were replayed shortly after the interview and explanatory prompts were documented in the research journal and acted as aide memoirs[9]. The verbatim transcription of the tapes occurred shortly thereafter. These transcripts were returned to the participants who were asked to verify their content and include additional comments if they felt this was necessary to clarify a statement. Most of the interviewees took the opportunity to clarify at least one statement that was then discussed with them to ensure accuracy. Only one participant made a significant change necessitating further negotiation. The

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[9] These are brief notes that the researcher writes as a reminder of such things as an occurrence, idea or question.

transcripts then underwent preliminary analysis. Once this was completed the final selective observations were conducted.

The formal interviews were semi-structured. The opening set of questions (Appendix V) was designed only to situate the interviewee and to begin the interview process. Subsequent questions were shaped by the ongoing analysis of the fieldwork data. This enabled ideas and interpretations to be tested, clarified and developed during the interviews (Hammersley & Atkinson 1995). Interviewees were invited to recount stories about OR nursing and to elaborate upon points of particular interest related to these stories. The opening request for this stage of the interview process *was 'Tell me about being an operating room nurse'*. Additionally brief excerpts from the field notes that related to a particular analytical focus were shared with the interviewees who were invited to discuss the issues raised for them. The verbal request at this stage of the interview process was *'Tell me what is happening here'*. Thus full account of the participants' representations of their culture could be made while testing the ideas emerging from the analysis of the field observations.

Informal interviews

Opportunities to conduct both solicited and unsolicited informal interviews arose during the observations. These differed from the formal ethnographic interviews as they were context specific, had discrete topic areas and were often extremely short. They were not necessarily held with 'key informants' and the insights of many nurses were captured in this manner. Solicited informal interviews were used to clarify an observation, seek reasons for observed activities and to try out ideas and interpretations. Unsolicited interviews were also useful because they tended to mark an occurrence that ran counter to the accepted cultural norm (Hammersley & Atkinson 1995). For example, a scrub nurse handed a surgeon a knife into his hand while the normal action would be to place the knife on a tray and then to the surgeon, thus reducing the risk of injury. The scout nurse commented, 'Normally she wouldn't do that, but she does for him'. This statement, which sought only a nod of understanding, opened up a line of inquiry into discretionary decision-making, rules and interpersonal relationships. Thus unsolicited statements of this nature were viewed as cues to observe more closely.

Field notes

Field notes are the traditional means of recording data in ethnography and form a central research activity. They are concrete descriptions of what occurs in day-to-day life of the culture being explored (Hammersley & Atkinson 1995). In this study the field notes were used to document classic ethnographic areas of concern. Thus the way in which the nurses used time, space, and objects, the relationships the nurses had with various people and the activities they undertook (Burgess 1982) were all of interest. Three levels of field notes were used in this study. Initially the preliminary handwritten field notes were made at the time of observation in the operating room. While the immediacy of this practice maximised recall (Spradley 1980; Wax 1982; Jorgensen 1989; Hammersley & Atkinson 1995 and Morse & Field 1996) it was found to be impractical because it attracted attention and changed the behaviour of the people being observed. Subsequently the observations were completed and brief notes were handwritten immediately afterwards in private. If a particularly long or complex observation was being made, notes were written every two hours in an area away from the observation site.

The preliminary field notes were then transferred to the computer and were expanded to create a detailed account of the observation that included such things as conversations and atmosphere. The resulting substantive field notes contained a concrete, rich description of the observation leaving the data open to further interpretation. In these notes social action became the text to be analysed. As written text, the transient events that had been observed could be read and reread for analysis. The process of expanding the preliminary field notes initiated the analysis and as Webb suggests acted as '... an instrument of actual discovery ...' (Webb 1982 p.196).

A third set of field notes was created through the analysis of the substantive notes. During this process the substantive notes were coded and annotated with ideas, cross-referenced with each other and the literature, to form the analytical field notes of the study (Burgess 1982). These notes were kept separate from the substantive field notes and interview data to facilitate open-minded reexamination of the data

(Hammersley & Atkinson 1995). The collective analytical field notes suggested the themes for the ethnographic account.

Production of the total text for analysis

Once the fieldwork was completed the data was collated to form the text for analysis. Ethnography is similar to the work of translators in that the ethnographer works to interpret the meaning of the language of another culture. It differs however in one major respect. The ethnographer must create the text to be translated, while the translator is given the text to translate (Crapanzano 1986). The text in this study consisted of the thick descriptions derived from the fieldwork and the verbatim interview scripts. Thick description differs from superficial (quick) description in that it describes the activity within the context allowing the reader to experience the event (Geertz 1973). The reflective section of the research journal supported the text.

Physical preparation of the text for analysis and management

The field notes and transcripts were reformatted to allow for a wide right hand margin and individual line numbering. The margins were used for comments and cross- references to analytical codes and literature. The line numbering was a simple organisational tool to keep account of the position of data elements. The field notes were placed into one document and the lines then numbered sequentially. This was done to protect patient rights, as more precise dating and numbering would increase the risk of their identities being discovered. It could also lead to the permanent team involved being readily identified. Each interview was line numbered as a separate entity and interview excerpts are identified by the pseudonym of the interviewee and the line numbers. This is shown in Figures 2, 3 and 4.

Figure 2: Extract from field notes

1462	Nothing is happening in the operating rooms. It
1463	is very quiet and all the nurses are congregating
1464	in the tearoom. They are relaxed and gossipy.
1465	One of the nurses relates her recent medical
1466	history and the whole group joins in with advice
1467	and teasing. The atmosphere is fun and jovial,
1468	very relaxed. It is one of the nurse's birthdays and

Figure 3: extract from Jill's interview transcript

90 and all those places are unpredictable and I liked 91 the, you know, 'I'm ready here, you know, – 92 throw something at me and I'll see if I can cope 93 with it, type of thing!' So, theatre is very much 94 like that. It's a challenge. Throw me a challenge	*Space for handwritten comments*

Figure 4: extract from the research log

Field notes 30.3.00 After hours (1805-2250) Duration of observation 4 hours 45 minutes   This observation was undertaken after hours and the permanent team that was present in the theatre department consisted of 6 nurses (2 operating teams). The theatre orderly went at 7pm. There were no consultant surgeons present. Three operations were completed in the observation period.

Research journal

> *Understanding yourself and understanding others are not two separate conceptual tasks, but one and the same* (Doyal & Harris 1986 p.85).

Schatzman & Strauss write that the fieldworker '… claims no antiseptic distance and noninterference from outside influence…' (Schatzman & Strauss 1973 p.2). As the primary data collection 'instruments' ethnographers are intimately involved in the field, contributing to, as well as gathering, data and shaping the study through their ideas and beliefs (Glaser & Strauss 1967 and Hammersley & Atkinson 1995). The hermeneutic nature of this study does not support the notion of bracketing, thus emphasising the importance of keeping account of the ethnographer's impact on the study (Koch 1996) To this end a combined research journal was kept throughout the study. It consisted of a reflective section, a procedural section (fieldwork journal) and a research log. While the literature suggests that the reflective and fieldwork journals can be maintained separately, the use of a combined journal clarified the

links between the development of thoughts (via the reflective section), research decisions (via the procedural notes) and research activities (via the log).

The reflective section of the research journal facilitated understanding of the content and process of interactions, personal reactions to incidents and the way they affected others (Lipson 1991). It provided a vehicle which could oscillate between involvement and detachment (participating and then reflecting) which is central to field work (Powdermaker 1966 in Burgess 1982). Further, it encouraged the explication of the preunderstandings and prejudices of the researcher in order that the meanings within the text could be viewed with an open mind (Gadamer 1975).

The reflective component of the research journal also helped to synthesise and sequence the study (Leininger 1985). It also provided a forum in which to argue out conundrums that arose from observation. For example:

> Nurses in the OR say that they advocate for the patient all the time. They provide examples of advocacy which include making sure that the patient is positioned correctly and that they are warm. In effect the nurses are doing for the patients what the patients cannot do for themselves. But don't all nurses do this; this is a nurse's duty of care and misses the essential nature of advocacy as 'pleading' on behalf of another. What are the implications for OR nurses if the traditional definition of advocacy is brought to bear? Can they still advocate? It seems that the situations in which advocacy issues arise involve other mitigating issues that act to limit the nurse's advocacy role at the very time that the patient is depending upon them. I would argue that they do not advocate well, that their keenly felt subordination to the medical staff makes it very difficult to do so. Efforts on their part to advocate for the patient are overshadowed by the need to meet other criteria necessary for smooth running of the operation or for their own wellbeing. Does this difficulty arise from knowing implicitly that advocacy is not in fact their territory? Do they include activities such as patient positioning because it is an uncontested territory or at least one shared with the technicians? Further the type of operation and the access required would dictate the position and attenuate any impact the nurse can make. (Research journal)

This excerpt from the research journal demonstrates the use of the journal as a forum for personal debate.

The procedural section of the research journal contained the decisions that related to data collection and analysis methods. Issues documented in this section of the journal included any changes to the way in which observations or interviews were conducted, the reasoning behind interview questions and the work-in-progress meeting reports.

The research log was maintained in the form of a diary which documented dates, times and lengths of observations, which setting, who was present, whether the patient was awake or not and any circumstances that arose during the observation that impacted upon it.

Data analysis

> *The heart of the hermeneutic problem lies in understanding the relationship between the universal and particular* (Gadamer 1975 p. 312).

The data analysis methods used in this study reflect its hermeneutic and ethnographic nature. Thompson states that '[i]n the hermeneutic tradition, understanding is described as a process of moving dialectically between a background of shared meaning and a more finite, focused experience within it' (Thompson 1990 p. 243). Thus the inquirer enters into the metaphorical hermeneutic circle in order to '... understand the whole in terms of the detail and the detail in terms of the whole' (Gadamer 1975 p. 291). Data analysis was an ongoing process that began once the first field visit had been completed. The continuous nature of ethnographic analysis meant that while the process of the study was structured, the progress of the study could not be accurately predicted at its outset but was reliant upon the leads that come to light in the course of analysis.

Walsh (1996) asks how, once the hermeneutic circle is described, should researchers comport themselves within it. Gadamer expresses difficulties with both the subjectivity and objectivity that makes either of these stances difficult to adopt in a study that has a hermeneutic basis. In order to work with this problem Walsh invokes the fourth characteristic of Gadamerian hermeneutics: play. He adopts the position of

researcher as player who is, according to Gadamer absorbed in the game, thus avoiding the need to take a subjective or objective stance. The moving to and fro, the give and take is both characteristic of playing and interpreting. The movement from the whole of the text to the part of the text and back again is the way in which hermeneutic researchers enter into a dialogue with the text. This notion of interpretation as play holds great appeal to the ethnographic project and thus to the study because it reflects the play or the drama into which the ethnographer enters.

In the analytical component of the research, the Horizon of the Question was established by setting up a dialogue with the text. By engaging in an ongoing process of question and answer with the text the many potential ways it could be understood were uncovered (Koch 1996) and the Horizons of Inquiry and Understanding were discovered.

During the initial phases of working with the data a preliminary analysis of the data was made and a functional data management system was established. This was achieved through the structured analytical process represented in Figure 5. The text was searched for frequently occurring words, phrases and occurrences and these data elements were organised into codes. This process was primarily one of data management, allowing easy retrieval of information in a given code (Roper & Shapira 2000). Once the initial coding was completed the similarities and differences between the data elements forming the codes were considered, using the principles of inclusion and exclusion outlined by Spradley (1980). The codes were then verified or reestablished accordingly. Similarities and differences between the codes were then considered and the codes were arranged into possible discrete categories. The registered nurses participating in the study were then asked, during observation sessions and the interviews, to verify the authenticity of one or more of the discrete categories. Adjustments were made on the basis of their collective comments and re-analysis of the text. The initial coding and categorising was a cyclical process, the depth of which gradually increased as more fieldwork (observation and interviews) was accomplished. The discrete categories were then arranged into broader categories on the basis of similarity and difference. Once again the registered nurses

opinions and evidence in the text were taken into account when establishing the final broad categories. Arguments were then developed for the inclusion or exclusion of a category into each of the thematic areas of the ethnography and the relationships that existed between and within each thematic area. Conceptual maps were developed to assist this process (Appendix VI). Six themes eventually emerged which form the six layers of the ethnography.

Figure 5: analytical sequence
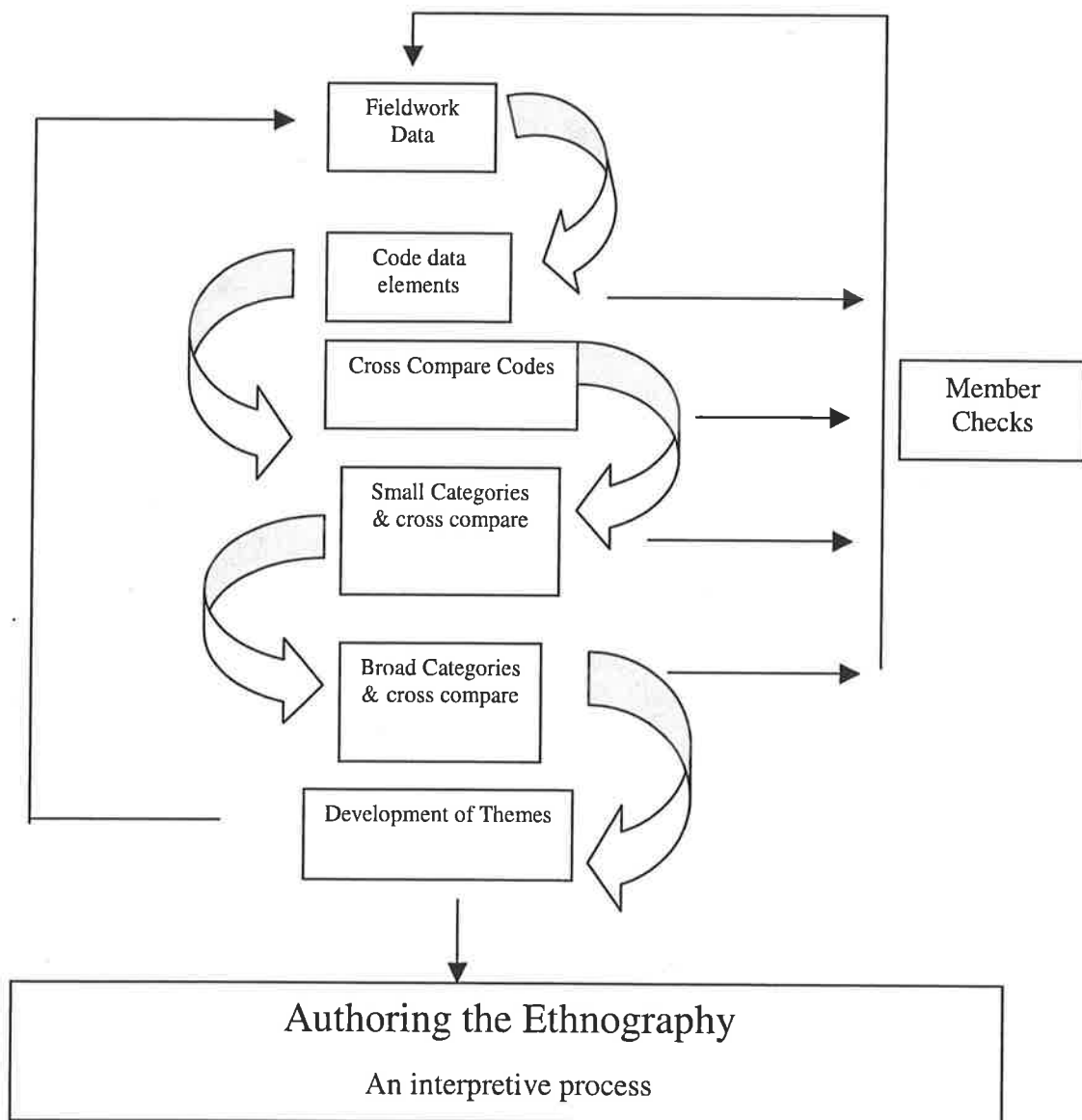
Gadamer considers that when reading text, the reader '... projects a meaning for the text as a whole as soon as some initial meaning emerges for the text' (Gadamer 1975

p.267). He also believes that the initial meaning is driven by expectations of what the text might mean, which he termed *fore-projection*. In this study the combined research journal was used to keep account of the ideas, interpretations and arguments that arose during analysis. Expectations and beliefs that limited critique and openness to possibility were rendered more detectable in this way.

Finally the six themes were drawn together in a way that reflected the central questions that the data inspired. The way in which they are presented reflects the authorship style developed for the construction of the ethnography.

Adequacy of the research process and product

In writing an ethnographic account the ethnographer is called upon to make many procedural, analytical and ethical decisions. The ability to judge a situation accurately in order to make a sound research decision is critical to the success of ethnographic research. An ethnography is the final account of the cumulative judgments made by the researcher. Therefore it is the responsibility of the researcher to demonstrate the soundness of these judgments by providing an auditable trail of the research process (Koch 1994). The authenticity of the ethnographic account does not simply rest in how plausible it sounds but in the way in which the final account was achieved. As Gadamer says, '... the only thing that gives a judgment dignity is its having a basis, a methodological justification and not the fact that it may actually be correct' (Gadamer 1975 p.271). Martyn Hammersley (1998) Professor of Educational and Social Research and experienced ethnographer suggests that the adequacy of ethnographic research must be considered from the perspectives of validity and relevance. The way in which he has constructed these criteria ensures that a comprehensive evaluation of the research can be achieved. Therefore the evaluation of this study's research process and product will be conducted using these two criteria as a guide. The evaluation of the study's relevance is presented in the concluding chapter of the thesis rather than here as it is principally concerned with the ethnographic account. Therefore the ethnography must precede this component of the evaluation. For the purposes of brevity issues that have bearing upon the validity of the research are presented in this chapter in table form (Table 3) and a full account of the theory, decisions and impact is presented in Appendix VII.

Table 3: Research strategies used to promote the validity of the research

Issue	Research strategies used to address these issues
Adequacy of definitions	• Definition of frequently used terms in the Introduction • Definition of infrequently used terms in the footnotes • Definitions of theoretical concepts through description and supporting evidence from fieldwork
Plausibility and credibility of the descriptions	• Descriptive accounts were drawn directly from field notes • Interview extracts supported descriptions • Rigorous field noting process • Verbatim interview transcripts • Ongoing critique by the OR nurses • Attention to the weightiness of the evidence (ie. aberrant occurrences were not included in the data as reflections of 'everyday' working life.
The relationship between the descriptions and the claims made	• Strict data management procedures • Cyclical rigorous analytical process • Critical feedback sought from nurses • Constant referral to data in order to ground emerging theoretical constructs and theories
Attention to the three main sources of error in judgment (a) Reactivity (b) Misperception (c) Constraints related to the researcher	
(a) Reactivity (the effect that the research and researcher have on what is being observed	• Extensive period of observation • Work-in-progress meetings • Personal contact with individual OR nurses
(b) Misperception of something observed	Attraction of unfamiliar acts • Development of rigorous field noting method • Staged movement in observation (from grand tour to specific observations) • Constant reiteration of the research purpose to self and others Participants' representation of the truth • Comparison of the original and interviewee verified verbatim transcripts • Use of observation, interview and combined research journal Prejudices (bias) of the researcher • Engagement within the hermeneutic circle • Maintenance of the combined research journal • Work-in-progress meetings • Personal communication with individual OR nurses • Continual review of research output by the OR nurses

Issue	Research strategies used to address these issues
Constraints related to the researcher	Gaining and maintaining access - Formal processes (ethics clearance and formal permission to access setting) - Consistently seeking permission from all nurses to observe them - Attention to cultural rules (eg. not engaging in the social mode during operations) - Personal communication with individual nurses to address their issues with the research - Work-in-progress meetings Presentation of self as researcher - Attention given to the balance between 'researcher', 'clinician' and 'friend' roles - Reflective component of the research journal Directing and concluding the fieldwork - Adherence to the data collection and analysis processes - Engagement within the hermeneutic circle and the hermeneutic notion of 'harmony' between the whole and the parts - Attention to the weight of evidence and data saturation

Finally writing the ethnography itself is, arguably a research method. The process of authorship is now presented and acts as an introduction to the ethnography.

Authoring the ethnography

> ... *Zeus understood when Hermes promised to tell no lies but did not promise to tell the whole truth* (Crapanzano 1986 p.76).

Writing an ethnography, according to Street (1992) demands that the ethnographer pay attention to not only what is written, but also how it is written. Methods for writing up ethnographic material are however not well documented and for the very best of reasons. Ethnography is, according to Geertz (1988) fundamentally a work of the imagination, although it is not imaginary. Therefore it is fiction in its truest sense. Ethnography is a story of a culture. As such it is a construction of that culture and is consequently incomplete. By fixing action and speech in text, the transient nature of human endeavour is lost irrevocably. The ethnography becomes a still life, no matter how rich the colours and how deep and varied the textures. The real culture moves on, the ethnography becomes another text to be interpreted. It is

therefore a construction rather than a reflection of reality (Hammersley & Atkinson 1995) and its authenticity depends in part upon the authorial signature (or authorial presence) and devices chosen by the ethnographer. Hammersley and Atkinson (1995) suggest that wide and varied reading can contribute to the understanding of the data at hand and can suggest ways of writing that engage the reader. Wide reading enables the researcher to explore a range of literary styles and gather potential literary tools to use in the construction of his or her own work. It assists the ethnographer to construct an authentic account of the culture. Geertz emphasises that it is upon its authenticity that, '... anything else ethnography seeks to do – analyse, explain, amuse, disconcert, celebrate, edify, excuse, astonish, subvert – finally rests' (Geertz 1988 p.143-4). Therefore a range of literature and authorial styles were explored for insights into authorship. Those who provided excellent examples of authorial presence were Ruth Benedict, Bronislaw Malinowski and Clifford Geertz. They each offered appealing devices, had interesting and pertinent faults and their works were ethnographies.

In *The Chrysanthemum and the Rose* (1947) Ruth Benedict throws the Japanese culture into stark relief by repeatedly comparing it with the familiar culture of the United States (her primary audience at the time). She uses this comparative tool with great skill slowly drawing the reader into a position of seeing the unfamiliar as familiar and vice versa. However this authorial device is used to a point where the reader begins to wonder which culture is being observed, that the culture of the US is the 'normal' against which every other culture is measured and understood. It is in effect a mark of ethnocentrism. Benedict's work is eminently readable and enjoyable. Her work is lively and inclusive but its dogmatic tone invites critique. In a world where so many different truths and realities coexist, a less arbitrary interpretation of a culture may be far more palatable.

Bronislaw Malinowski in *Argonauts of the Western Pacific* (1922) on the other hand, leaves the reader in no doubt that the culture (in this case the Trobriand Islanders) he explores is alien. *Argonauts* is descriptive, evocative and ethnocentric. The exploitive nature of his work is apparent in the writing although he strives to

represent the inhabitants and their culture as equal to his own. He draws his information from his close contact with the cultural group, a closeness that had a profound effect on the conduct of ethnographic fieldwork. His use of culturally inappropriate terms such as *noblesse oblige* serves to magnify the differences rather than demonstrate similarities between cultures and his own separateness from the group is clear. His diary, published posthumously in 1967, is enlightening and, read in conjunction with *Argonauts* provides a fascinating insight into the real conduct and construct of an ethnography.

Clifford Geertz (1988) considers that the approach taken to writing ethnography is a choice between that of playing pilgrim and that of playing cartographer. But the writing of an ethnography is neither of these things. It does not seek to map out a culture nor does it have the same objectives as a pilgrimage. He writes that it is critical for the ethnographer to convince the reader that the author was truly immersed in the culture. His own work is illuminating. While leaving the reader in no doubt that he was at the scene, Geertz, in the renowned ethnographic account of a Balinese cock fight, colludes with the reader, placing a metaphorical arm around the readers' shoulders and urging them to 'take a look' (Crapanzano 1986 p.69). In doing so he places himself apart from and above the culture under observation. Crapanzano (1986) argues that the language Geertz uses is not language that the cultural group (in this case the Balinese) would have recognised as their own and in so doing reduces the Balinese to two dimensions, while the reader becomes central. Cottom (1989) concurs and argues that in Geertz's assertion that cultures are bounded totalities he places himself on the boundary and therefore looks in at the culture. The reader therefore is inevitably also on the outside looking in.

These classic works by three eminent ethnographers encouraged exploration of literary devices that could be used in this study to place the reader, the participants and the author on the same stage in a way that reflected the study's intent. The interweaving of theoretical argument, pertinent literature, and the extracts from the field notes and interviews is therefore used to achieve this. It acknowledges that as a textual dramatisation of everyday life ethnography relies largely upon allegory

(Clifford & Marcus 1986). Therefore actual situations, as recorded in the field notes, have been used in the ethnography as symbolic illustrations of aspects of the culture. The stories seek to balance and substantiate the analytical arguments presented in the ethnography (Hammersley & Atkinson 1995 and Street 1992).

In seeking to construct the thick descriptions that create a compelling account of culture the four master-tropes *metaphor*, *synecdoche*, *metonymy* and *irony* are utilised throughout the writing. The use of these master-tropes was consistent with the hermeneutic nature of this study. They enabled movement between the part and the whole of the text, and highlighted the significance that specific aspects of the culture had to the analysis as a whole (Hammersley & Atkinson 1995). The incorporation of metaphor and synecdoche were integral to the writing of the ethnography in which the metaphor is complimented by the synecdoche. Thus the metaphorical understanding of a cultural issue is complemented by a story about that issue which exemplifies the whole. Metonymy was used to strengthen the voices of the participants, ensuring that their words and meanings were used throughout. Its use is seen in the selected ethnographic stories and interview excerpts (for example 'scrub' denotes the nurse working within the sterile field). Making use of the idiosyncratic terms used by the OR nurses thus contributes to the way in which the culture can be understood in its own terms. The incorporation of irony allowed the familiar, taken-for-granted aspects of the culture to be contrasted with the unfamiliar aspects, and then to be explicitly theorised (Hammersley & Atkinson 1995). For example the 2nd Layer of the ethnography makes use of irony to explore the unusual ways of understanding time in the operating room.

Finally, this ethnography is based on the belief that it is not possible to represent a culture from any other standpoint than that of difference. Simply by observing, by interpreting, by seeing the need to explore and illuminate the culture, the ethnographer is set apart from the participants and no matter how much emphasis is placed on the voices of the people within the culture, the ethnographer's voice is predominant. In the choice of data included, in the critical and philosophical approach, in authorial style, the authorial signature is on every page of the

ethnography. In the final analysis, this ethnography and all its implicit limitations represents the author's construction of the culture explored. In this it reflects van Maanen's belief that ethnography is '... highly particular and hauntingly personal' (van Maanen 1988 p.ix).

Introduction to the ethnography

Theatre Wear Must be Worn Beyond this Point presents a suite of six ethnographic layers that are brought to closure within the concluding chapter. In deciding how to construct this ethnographic account of the Operating Room the tension caused by artificial separation of a culture into chapters was instructive. Unable to comfortably separate what are intimately interwoven aspects of the culture, the ethnographic account has been constructed along the lines of overlaying sheets. Placing the sheets on top of one another enables a composite picture to be constructed. Thus the chapters in *Theatre Wear* are called the Layers and each is written in light of the others. While the complexity of the data was overwhelming the functional nature of the operating room itself suggested a utilitarian division of the material would be most in keeping with the culture. Therefore the Layers reflect the standard areas of exploration in ethnography as follows:

First Layer   Operating room nurses and Space
Second Layer: Operating room nurses and Time
Third Layer: Operating room nurses and Artefacts
Fourth Layer: Operating room nurses and Patients
Fifth Layer: Operating room nurses and the Permanent team
Sixth Layer: Operating room nurses and the Multidisciplinary Team

The following codes are used within *Theatre Wear* to reflect sources of data:

FN xx-yy   Field Notes: first and last line number
I.I. FN xx-yy   Informal interview documented in the field notes: first and last line number; all informal interviews involved Registered Nurses
'Name' xx-yy   Interviewee pseudonym (Jill, Barry, Rose, Winnie, Lee, Robin, Anne, Penny): first and last line number

The research journal is referred to simply as the research journal.

An introductory story is presented at the start of each Layer. These are designed to shift the focus from the previous Layer and provide context for the present Layer. They are composite stories, with material collected from throughout the field notes. So while they reflect what occurs in the theatre they are not a single record of an actual event. For this reason there is no field note number registered at the conclusion of these stories.

Summary of the research methods

Participant observation, formal and informal interviews, field noting, maintenance of a journal (combining the research log, field work and reflective journals) and a sequenced analytical process were the research methods used to conduct this study. These standard ethnographic methods were well suited to the research methodology that fused hermeneutic philosophy with ethnography. Issues related to ethics, access and the implementation of the research methods were addressed through the use of a range of accepted strategies. These included an extensive observation period in the field, a rigorous field noting process, continual inclusion of the participants in the research process and engagement in self-reflection through journaling.

Attention was paid to the style of writing used in authoring the ethnography. Authorial styles and signatures of a variety of ethnographers were considered and informed the development of the writing style employed in this study. The four master-tropes (metaphor, synecdoche, metonymy and irony) were used to create the ethnographic account of operating room nursing: *Theatre Wear Must be Worn Beyond this Point.*

Theatre Wear Must be Worn Beyond this Point

**A hermeneutic ethnographic exploration
of operating room nursing**

The First Layer: Operating Room Nurses and Space

Opening story

The theatre department doors swing heavily open, their metal edges releasing with a sudden click. A trolley bearing a patient is pushed through by a wards-man. The patient, a large, anxious-looking man, glances around him and in doing so dislodges the paper cap that covers his hair. A nurse dressed in a crisp white shirt and smart navy blue trousers accompanies him. She glances expectantly towards a group of people all uniformly attired in soft, baggy, light blue tops and trousers, and one, a nurse, detaches herself from the group and steps over to the trolley. She nods and smiles at the patient placing her hand briefly on his shoulder and then leans over towards the nurse who has brought him in. Standing either side of a red line running the length of the floor the two nurses briefly exchange information about the patient, information that is eagerly attended to by the patient himself. The theatre nurse turns and smiles at him. She directs a volley of questions at him and establishes when he last ate, drank, urinated, whether he has any allergies, his own teeth and what he believes he is having done in theatre today. Satisfied, she readjusts his paper cap, nods to the ward nurse and wheels the trolley across the red line leaving the ward nurse empty handed and patient-less on the other side. Barred from crossing the red line because of the way she is dressed, the ward nurse releases her patient into the care of the blue-garbed theatre nurses. Beyond the red line is their territory and for the duration of his stay, the patient is in their care.

Introduction to space

The way in which people organise and use space reflects much about the culture they live in. It provides insight into cultural territories, cultural activities and what is important to that cultural group. Fundamental issues such as how close people sand to each other and who has access to certain spaces contributes to the spatial representation of their social world. Exploration of how space is constructed, how and when it is used, who it is used by and why contributes to the way a culture can be understood (Spradley 1980). Space is one of the two principal coordinates that

people use to orientate themselves and organise their day-to-day lives (the second coordinate is time and the 2nd Layer is concerned with its exploration). Largely because of its importance, people within a culture assign meanings to particular spaces. While some of these spaces may be common to any number of groups, others are specific to one society. For these reasons the exploration of the way in which people act and the relationship this has with space is an area of ethnographic interest. This Layer is concerned with the exploration of the day-to-day lives of the operating room nurses in terms of their relationship with space. A description of the physical layout of the ORS space precedes this discussion. The purpose of this is to orientate the reader to the setting. A map of the ORS is presented in Figure 6.

The space of the ORS

The space of the Operating Room Suite (ORS) presents something of a mystery. It is a space that has been deliberately created to fulfil a formal role. It is a space designed purely for its function and has not, like many spaces, been adapted for its use. In this it reflects the maxim 'form ever follows function' introduced to architecture by Louis Sullivan in 1896. The inextricable relationship between form and function that is apparent in this statement (Fink 1999) is clearly evident in the architecture of the ORS. Its internal forms are designed for the specialised functions that occur within it. And yet despite its utilitarian nature, it is a secret and mysterious space. Key codes for entry, stringent policies and strict dress codes create a sense of isolation from the wider hospital population and yet paradoxically the ORS is a high traffic area. An enormous number of people come into the ORS every day. Surgeons and anaesthetists bring their entourage of bug-eyed nursing and medical students to observe in the theatres. Cleaners, technicians, midwives and various medical equipment representatives all move in and out of the ORS on a regular basis. The steady stream of patients brought from the wards bring the ORS staff in frequent contact with the ward staff. But even this substantial transient population does not dispel the sense of isolation felt by the people who work in the ORS. These nursing staff have little in common with the nurses in the wider hospital. They do not dress like them, work like them or eat with them. They do not rotate out of theatre to 'pool' in the ward areas and they are regularly on-call in a way the ward nurses are not. While the nurses in the ORS acknowledge that contact with the hospital

88

community would be beneficial, factors specific to their workplace make intermingling complicated. As Jill notes:

> Apart from the fact that it [ORS] is physically isolated and the nature of the place is that we only get so long for lunch or so long for morning tea and you have to, the policy is you change your clothes, takes ten minutes out of your lunch time to get changed and go and mingle with everybody else, so people say 'My lunch time is sacred to me – I don't want to spend half the time getting changed and unchanged'. So you tend to be even more isolated in that respect. (Jill 639-649)

The principles of asepsis are embedded in the design of the ORS. The least clean areas exist on the outskirts of the department while the cleanest area is nestled protectively in its centre. Discovering the basic layout of the ORS is therefore something like pealing a three-layered onion, moving steadily towards the protected core. Fox (1999) called this the 'circuits of hygiene' suggesting the cultural importance of the principles of sterility in his metaphor. The outskirts of the department admit a wide range of people. A continuous corridor circumnavigates the department, separating the 'outer space' of offices, storage areas, holding bay and recovery room from the two central spaces of the ORS – the theatre suites and the 'core'. The tearoom, seminar room, nursing and medical offices and the change rooms are situated on the floor below. They constitute the 'supporting space' as they support the central activities of the ORS. They are linked to the racetrack through a set of internal stairs. Each space represents a large cultural territory and is governed by associated cultural rules.

The outer space

A large sign hangs just inside the front door of the ORS. Its message 'STOP. Theatre Wear Must Be Worn Beyond This Point' is reinforced by a red line running along the floor. Both are barriers to free entry to the area and act to preserve its cleanliness, protecting it from the outside environment. The protection is largely symbolic as the trolleys bearing the patients move freely between the wards and the ORS. The nurses understand that the red line offers symbolic rather than real protection. As one RN noted:

The red line is a good example[10]. It isn't cleaner on one side than the other, we know that. Other people come and laugh behind their hands and say 'oh look they've got a red line, don't they know?' But we know what it means. It means this area is different and has sterile things and spaces, so respect that. And I think that's fine. Yeah, we know what it means. (I.I. FN1251-1260)

The rules governing departmental 'traffic flow' come into play upon entering the outer layer of the department. 'Traffic' relates to anything that moves around the ORS and this includes people. Movement through the outer layer of the ORS is anti-clockwise. While staff members have access to the full corridor, the patients travel only three quarters of it. They return to their wards before reaching the 'dirty' corridor (see Figure 6).

A person walking along the outer corridor and beginning at the front door of the ORS will pass the reception desk and waiting area (holding bay) where the patients wait for their operations, their trolleys neatly parked. Turning past the patients the walker moves down a long stretch of corridor, the 'venetianed' windows of the operating rooms on one side, scrub sinks and windows to the outside world on the other. The heavy plastic doors of the recovery room are at the end of this length of corridor. Leading into the recovery room, they herald the last stage of the patient's perioperative journey. This room is large and lit with natural light. Here too the patients are parked side by side, each parking space neatly outlined. They open their eyes sleepily to the nursing staff, seeking a point of reference to re-orientate themselves. Their breath fogging their oxygen masks, their drips and drains flanking the trolley. Once recovered they will be passed back to the ward nurse through a side door leading to a corridor outside the ORS.

The walker now enters the final stretch of corridor. This is the 'dirty' corridor. Non-sterile stock and waste disposal occur here. No patients go here, only their troublesome body parts, carefully removed, examined and discretely disposed of. Specimens are dispatched to the appropriate laboratory. Used instruments are jettisoned to the Central Sterilising and Supply Department (CSSD) one floor below.

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[10] An example of an obsolete traditional symbol that survives within the ORS.

Part way along this corridor, a dogleg bend hides the manager's office, the faltering photocopier and a laden steel-wire linen trolley. Once past these the circuit of the continuous corridor, the outer layer of the ORS, is complete.

Figure 6: Map of the operating room suite
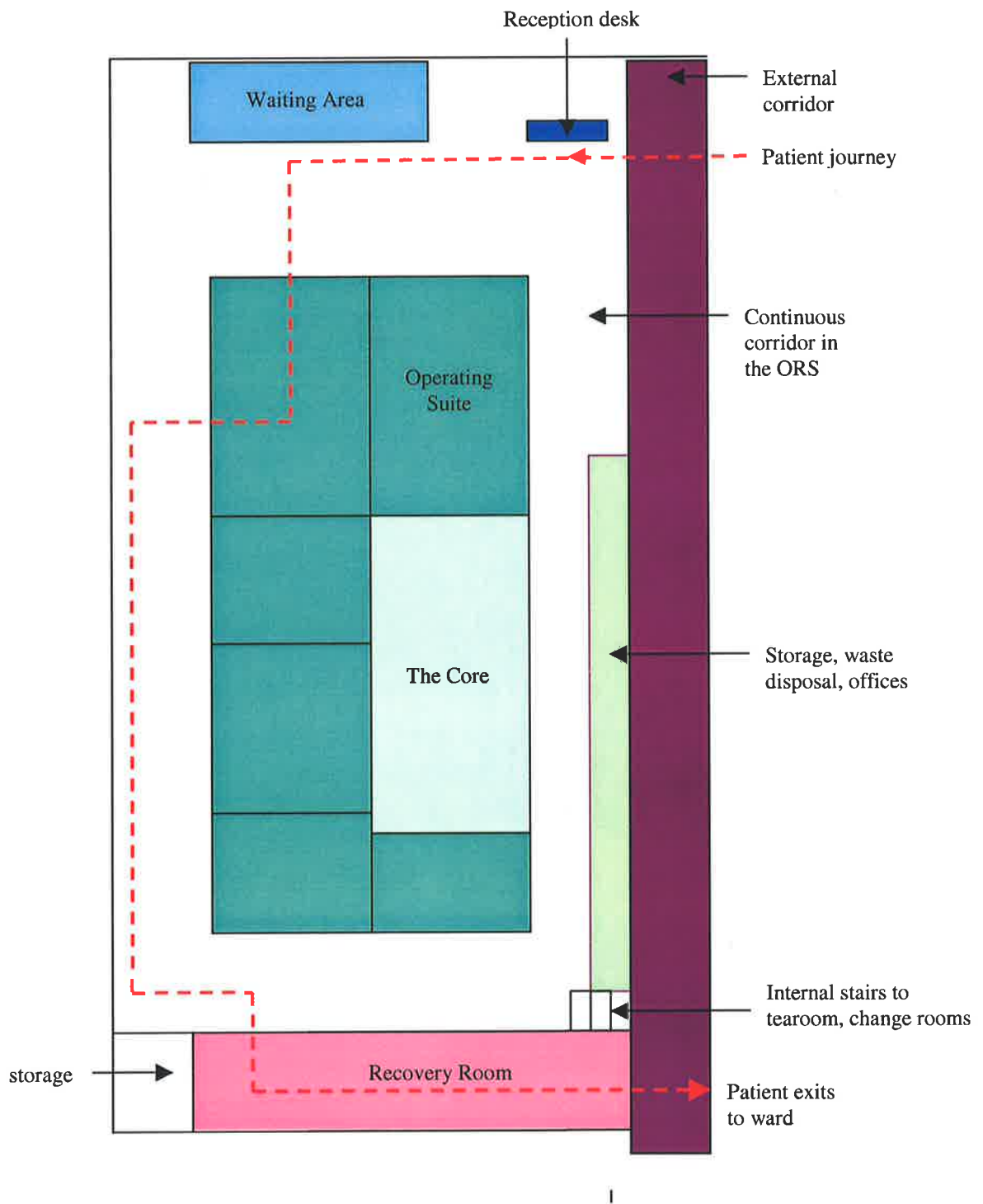
The medial space

Lying in the medial layer of the ORS are the six operating suites although only five of them are operational. Each suite consists of a theatre with an accompanying anaesthetic room and a waste disposal area (see Figure 7).

Figure 7: Map of an operating suite
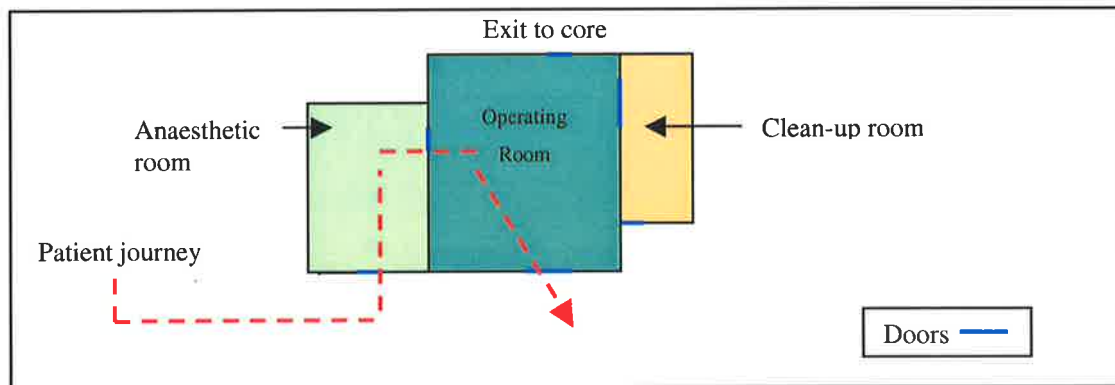
There are six doors to each suite and cultural rules govern the use of them. As barriers to the medial and inner layers the doors signal the need to consider the rules of the area being entered. They are symbolic of transitions. In this case they are the semiotic representation of different levels of cleanliness. Patients and staff not included in the scrub team enter via the anaesthetic room. The scrub team enters from the corridor and the scrub sinks. Patients leave through this door and the anaesthetic nurses and anaesthetists will leave with them. The medical members of the scrub team have a tendency to leave through this door as well. The nursing and other staff remaining in the theatre space remove the waste through the door leading to the waste disposal room. While the waste is removed and the theatre is cleaned the doors are used freely by any staff entering and exiting the space. Once the space is clean (and reset if appropriate) the traffic then reverts to 'clean-to-dirty' direction of flow. Nurses and attendants also use the door joining the theatre to the core.

The inner space

The nurses call the inner layer 'the Core'. This large, open plan storage and set up space is lined with shiny steel wire shelving laden with blue and plastic wrapped

packages. Here and there steel trolleys stand heaped with careful selections of packages, which match the contents of the order sheet Sellotape to each trolley. A computer blinks green lines of equipment and ordering codes. The instruments and associated equipment for the day's surgery are set up and stored in this area and the sundry supplies required during operations are also gathered from here. The sheer mass of equipment and packaged bundles is deceptive, overwhelming. At first glance it appears chaotic. But the space is in fact meticulously ordered, arranged to maximise efficiency and minimise delays in a department that demands speed and accuracy. It is the most protected of the large physical spaces of the department and masks are always worn here. There is a one-way traffic flow of equipment between the core and the theatre. Only the nurses and attendants enter this space.

The supporting space

An internal flight of stairs leads to the supporting space that lies on floor below the theatres. Meetings, tutorials, debriefing and socialising occur here. The substantial teaching space and associated equipment reflects the strong commitment to teaching and learning in the ORS (this issue is developed in the 5th Layer). The change rooms are also situated within the supporting space.

The ethnographic space

This ethnography is concerned primarily with the medial space of the ORS and in particular with its 'inner sanctum'. The operating room and its unique territories echo the secretive, secluded nature of the inner sanctum. Once the theatre doors have closed and the operation has commenced the room is insulated from the concerns of the main department. Contained within its walls a group of masked and gowned figures huddle intently around a mound of green drapes. The brilliant central lights burn down, illuminating a vivid patch of glistening yellow and red in the midst of all the green. Tubes snake out from under the drapes and attach to various machines and outlets. The steady cardiac blip-blip-blip couples with the rhythmical sigh of the ventilator. Masked figures in blue move around the periphery of the theatre, giving, taking, observing, documenting. They are attuned to the activities of the inner group.

The nurses' perception of the theatre as an isolated and protected space is expressed through their everyday language. The use the metonym 'inside' to indicate the operating room illustrates this. The following example took place in the anaesthetic room just prior to entry into the theatre:

> The anaesthetic nurse inserts the line after the anaesthetist has placed the cannula insitu and then starts the IV running. While she is doing this her eyes dart from the IV to the patient's eyes. The scout nurse comes in, picks up a chart and glances through it, looks into the patient's eyes and says 'Hello I'm Joan I'll be inside with you.' (FN 1590-1596)

The operating room is an uncompromisingly technological space. Its physical landscape is minimalist and functional with scant regard paid to aesthetics. Its purpose is reflected absolutely in its clean lines, the practical metal trolleys and shelves, the slender black tri-sectioned theatre table placed centrally under the long-armed theatre lights. While the blue and green drapes provide softness and colour their only purpose is to protect and define the sterile field. Within this room a number of unique cultural territories exist, each with accompanying rules. It is a space for which the nurses feel ownership. It is 'their [the nurses'] room' (Rose 804), their territory. Jill is very clear about ownership:

> ... doctors own the patients, we own the theatre, medical students are sort of out on a limb and hospital aids own the clean-up room and the attendants own all the table detachments and the anaesthetists own the machines and the monitors and part of recovery, that type of thing (Jill 522-528).

The extent of the responsibilities the nurses derive from this ownership is substantial as Jill acknowledges:

> ... once you come into my theatre I am responsible for you and responsible for surgeons falling over backwards, tripping over the light or the med students who don't know how to glove and gown, and the table, so they [the patient] don't get pressure sores or you know, telling the surgeon the tourniquet has been on for too long, you know, 'Shouldn't we take it off and revascularise the limb?' or something like that, so you do tend to do those things automatically (Jill 615 – 626).

She introduces the idea of professional blinkers that act to define the fields of responsibility within the operating room. The blinkers that the nurses wear reflect their ownership of the room:

> I think the nursing staff tend to be more focused on the responsibilities of the people within that theatre. I mean, the nurses are responsible for themselves as well as the other people in the room. We tend, for instance, if someone is scrubbed and they are not wearing eye protection, the nurses say, 'Have you got eye protection, have you got -?' Like mothers chasing after kids. 'Have you got your hankie, clean hankie, underpants and got your lunch and your school bag and your homework?' and that type of thing. Sometimes you feel that you are playing mother half the time…(Jill 566-578)

Lee agrees saying:

> Although the surgeon is in control I think the scrub nurse is also at a certain level, you know, got to even watch out for surgeons. (Lee 113-116)

The numbers of inexperienced staff moving through the ORS heightens the importance of the nurses' sense of responsibility. The potential for accidents and contamination of the field appears to increase as the number of staff in the theatre increases. This is particularly the case when inexperienced staff members are present. The nurses, who know the many rules governing the theatre attempt to help newcomers to adjust although their authority to instruct newcomers is not always recognised (a situation that is developed further in the 5th and 6th Overlays). While the nurses actively assist a person who does not know the rules, they will also step back from the responsibility if the person fails to heed their advice. The following field note involves the 'eye wear' rule. In the theatre any person who is near the patient is required to wear protective eye wear. It is readily available to all staff at the scrub sinks. Observance of this rule varies. The nurses rigidly adhere to the rule; the medical staff take a more flexible approach:

> The resident comes in after her (the registrar) and takes longer to gown and glove. He is not wearing eye protection and the scout, then the scrub, suggest that he should wear it for his protection. He refuses both the nurses' suggestions and takes his position next to the registrar as she makes the initial incision … The cord[11] needs to

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[11] The umbilical cord. The operation was a caesarian section.

be cut and the resident will do it. He cuts it and a great squirt of blood hits him in the face. He reels back from the table and the scrub and registrar snatch things from him as he does so. The scout moves with him as he goes out of the theatre. She is telling him what he needs to do to clean up and minimise risk. Her tone is concerned and supportive but when she reenters she is irritated. 'He doesn't have a leg to stand on. All the stuff is there and he refused to wear it. Oh well, it's up to him now, what he does.' (FN 5360-5393)

As this field note shows the nurses take responsibility for this staff member's safety. However when he does not heed their advice they no longer feel responsible for him, recognising the limits of their power to influence his behaviour.

Coordinating the operating room as a territory

The coordination of the operating room is the scout nurse's responsibility. Coordination is a complex activity and the nurses liken it to directing traffic or air traffic control. The following excerpts illustrate the complexity and essential nature of the coordinating role[12]. The multi-layered nature of coordination is clearly evident in Jill's example of coordination. She alludes to the professional blinkers again:

> ...if you see a surgeon operating they have no idea of what is going on around them, they see the wound, they don't know that half the instruments and things have fallen off the table and onto the floor or they don't know what the blood pressure is doing and that type of thing. So everyone tends to wear blinkers in their job, in many respects. And the nurses do too, in a way, you see getting the operation running smoothly, getting instruments available and getting instruments back on time from Central Sterilizing if you need them. It's a bit like, I think I have said to you before, it's a bit like an airport, an air traffic controller, you know you have to get this one in and that one out and another one in and get this one cleaned up and out of the way and the next one. It's a bit like supermarkets and production line and you just need a few players to come in and do their job and they can go out and it's like almost ownership of the theatre ... And different ownerships and different blinkers, depends on whether you are seeing the big picture or whether you are seeing just a small part of it and I believe that if you took nurses out of the whole scene you would lose the organisational perspective ...(Jill 503-534)

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[12] This role is developed further in the 5th and 6th Layers.

Barry also calls attention to the complexities of coordinating and includes consideration of interpersonal issues within this role:

> ... in the middle of an operation you're not only thinking about what's going on here, how this is progressing, what's the interplay of forces, you're also thinking about what are all the rest of the people doing and what we need them to do and all sorts of things like, all the preparations for the next operation and the meal breaks and what's happening in recovery room and how do I need monitor that and there'll be all sorts of things going on in your head that you need to deal with yourself and what's happening with these nurses here, are they really managing this well and what do I need to do about teaching them and getting the message across in the right way so they don't get upset. Meanwhile if the anaesthetist and the surgeon are in a jovial mood you need to humour them too[13]. (Barry 366-385)

The nurses are clear about their ownership of the operating room but when the focus moves to the patient, the ownership of territories becomes more complex.

The patient as a territory

It is in the operating room that the patients finally relinquish all responsibility for themselves into the hands of the theatre team. This process of divesting personal responsibility has gradually been in progress since entry into the ORS and is reflected in the patients' placid acquiescence to their passive role in theatre. Once in the medial layer of the department the progress towards dependence is rapid, culminating in general anaesthesia or the fog of Midazolam. The patient is now a human territory that the nurses consider to be their responsibility. In the following field note the nurse seeks to reassure a patient who is waiting to go into theatre. By verbalising her sense of responsibility the nurse appears to encourage the patient to relinquish control and take on a passive role confident that the nurse will look after her best interests:

> ... the anaesthetic nurse comes over to her making eye contact and touching the patient on the shoulder. The patient is very nervous and states that she is feeling tense. The nurse says that it will be all right and she'll be looking after her when she's *in there*.[14] (FN 1511-1516)

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[13] Humouring the surgical staff is explored in the 6th Layer.

[14] The term 'in there' is another metonym for 'operating room'.

While the nurses are acutely aware of and committed to the care of the patient, the responsibility for this territory, that is the patient, ceases immediately the patient leaves the operating room. When the patient leaves the demand for the OR nurses to solve the everyday problems of perioperative patient care shift to other nurses. Jill illustrates this:

> Once they go out the door, then they become recovery's problem and until they come in the door they're the holding bay's problem or the anaesthetic nurse's problem, that type of thing. (Jill 626-630)

Responsibility for the patient as a territory is understood by the nurses in holistic terms. Although it is difficult for them to maintain a holistic approach in the theatre[15] the nurses strive to maintain the patient focus. Ironically, their attempts at maintaining a holistic view can lead the nurses to annex personal care and comfort of the patient:

> Well I would do it [change a patient's sanitary pad] myself, I wouldn't allow, I would allow one of the nursing staff. Um you've got to be careful because we've got an increasing number of male nurses that deal with that situation, but patients still feel comfortable, whereas if an attendant did it, I think that's totally inappropriate that they should be doing things like that and one it's not their role and they don't you know, I think it should be the nurse. Um, and if possible, a female but if there happens to be 3 male nurses in the room it's not, not, you know, you can't do that. But um, yes, if the pad needs to be changed you change it because she's supposed to be comfortable when she wakes up and that's what us nurses have to worry about. Um, but just do it discretely, you know, if she's having say a gynaecological procedure then you just do it at the end, but if it's an abdominal procedure, just at the end of the case change her pad before she goes to recovery if she specifically said. Quite often unless it is a gynae case you might not know because they've got the little knickers on and you might not know that's she's actually got her period. (Rose 339-361)

Other members of the team also appear willing to accept that personal care and hygiene are the nurses' domain:

> 'Has he got false teeth in?' The anaesthetist asks the anaesthetic nurse. The nurse nods and he asks, 'can you take them out? I want to show the resident something.' The nurse puts down the laryngoscope and tube, reaches over and takes the teeth out of the

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[15] Discussed within 'The Patient as two territories'.

patient's mouth and places them into a denture cup (FN1923-1928).

Territorial issues surrounding the patient become more complicated once the operation is underway.

The patient as two territories

Once anaesthetised or heavily sedated the patient can be divided into two territories that are then temporarily colonised by the theatre staff for the purposes of the operation. The use of the term 'colonised' reflects the strong link colonisation has with dominance and control. Without obtaining complete control of the patient operations could not be conducted as safely as they currently are. Thus, one territory is the possession and responsibility of the anaesthetic team while the other is the province of the surgical team. Subdividing the patient in this manner is culturally accepted and descriptions of the territories are part of the everyday language of the theatre. Terms such as 'your end, our end', 'up here, down there' and 'the right side of the blood brain barrier' are used as a matter of course:

> The surgeon and the registrars straighten up and the surgeon says to the anaesthetists, 'okay we can certainly go ahead as long as you're happy up your end'. (FN 3666-3669)

However while the description of the territories may be culturally acceptable there appears to be tension amongst the nurses when balancing the holistic perspective with this more compartmentalised perspective:

> The anaesthetists are taking great interest in the patient who's blood pressure has dropped to 76/35. One leans over the drape and says 'are you leaning on something down there?' The operation pauses as the surgeons and scrub nurse all check that they are not leaning on anything. 'No' the surgeon shakes his head and they return to the operation. The BP remains low. The scout looks uncomfortable 'They'll want to do something about that soon' he says in an undertone. He keeps looking at the BP and then finally tears himself away from the scrub nurse and up to the anaesthetists. The scout then works with them getting medications and fluids and gradually the patient's BP comes back up to normal. The scrub team is oblivious to what is going on and are stolidly working away in the operation site. (FN 3628-3644)

It is accepted by the nurses that not every nurse will have a holistic view of what is occurring with the patient. The nurses particularly involved with the surgical territory will have a more limited view than the nurses in the anaesthetic territory:

> ... probably as an anaesthetic nurse you would have more awareness [of something going wrong with the patient], because as a scrub nurse you're focused on that area. Although, I find myself, I will sort of look up at the monitors every now and then, but you're still not able to actually get a look at the patient and so from the point of view something's going wrong physiologically, um the anaesthetic nurse probably has more awareness that, that it is, as a scrub nurse is, if something's gone wrong it's probably really more confined to the area you're actually operating on (Rose 487-498)

Indeed Rose's observation is borne out throughout this ethnography. The anaesthetic nurses do tend to have a broader view than the scrub nurse. This may be because the scrub nurse is largely concerned with another important territory: the sterile field.

The sterile field as a territory

The sterile field is an important and fiercely guarded territorial space in the theatre. Once the operation is in progress the sterile field is centrally located in the theatre. It consists of the operation site, the drapes that fully obscure the patient, the fronts and arms of the surgical gowns, the instruments and the associated trolleys, tables and bowls. The sterile field is green, green drapes, green gowns. Green is a colour to navigate carefully. Seen from outside through the internal theatre windows the sterile field appears like a tightly packed green island illuminated by the theatre lights.

Both the scrub and scout nurses take responsibility for maintaining the sterile field. The scrub nurse appears more concerned with the field immediately in his or her line of vision, whereas the scout nurse has overview of the whole sterile field. All members of staff are expected to be aware of the sterile field and act to protect it. The scout and scrub nurses appear to enforce the rule. Indeed it is part of the formal responsibilities of their roles set out in the ACORN Standards, Guidelines and Policy Statements (2000) and discussed further in the 5th Layer. A person who appears likely to breach the sterile field will provoke a rapid response from one of them:

> The scrub is finding the resident a bit of an interruption to her focus on the operation site. He is not occupied at all, filling an observation role only and he keeps leaning in to the site and turning his back on her tray. He comes awfully close to brushing it a couple of times and she draws breath on one occasion and then on the next she looks him in the eye and says firmly to him 'Please watch your back. That tray is meant to be sterile and your back isn't!' she returns her gaze back to the operation site straight away. He straightens up immediately. He becomes engrossed in the operation and begins leaning in again. She glares at him and he moves smartly back. (FN 3652-3666)

More active measures to protect the field may need to be taken when contamination is imminent:

> One of the nurses relates a story of a new registrar who had to put on a new pair of gloves and misinterpreted what was wanted. He stripped off his gloves and tossed them into the sterile field. All the nurses laugh and roll their eyes and ask, 'what did you do, what did you do?' 'Oh well you know' the nurse makes an expansive gesture with her hands and grins 'I snatched them mid air' they all laugh again (FN1493-1502).

Even scrubbed members of the team are not welcome in parts of the sterile field territory[16]:

> While the scrub nurse waits for the surgeon to scrub down the limb to be operated on she leans with her hand on the stack of drapes folded neatly on the bowl stand. The registrar, who is scrubbed, looks across at her and places his hand nonchalantly on the drapes near her hand. She looks at his hand and smacks it off, laughing. He puts it back and she looks less than happy but puts up with it (FN4487-4494)[17].

Because of the highly protected nature of the sterile field entering into it can be a disconcerting experience for a person who has worked only in the non-sterile area. The rules designed to protect the field are hard to 'unlearn'. The main rules for non-scrubbed staff include:

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[16] The 3rd Layer introduces the artefacts used in theatre and the territory of the instruments links strongly with the territory of the sterile field.

[17] This field note also illustrates elements of the relationship between the nursing and medical staff. This relationship is explored in the 6th Layer.

- always go from clean to dirty;
- do not touch green;
- never walk in front of the set-up trolleys, skirt around them;
- leave a 30cm gap between you and the sterile field, and
- if you touch it, admit it.

The following field note shows the difficulties posed when entering the territory for the first time. In this case the rule is the 30cm rule:

> The inexperienced nurse is scrubbing up to examine the instruments that the scrub nurse has set out for the operation that they are conducting. She walks over to the scrub and skirts the sterile field leaving a wide distance between herself and it. The scout says, 'see how much room she left, she doesn't think of herself as part of the scrub team yet.' (FN 4790-4797)

Occasionally the right to a space within the sterile field will be contested, albeit innocently. The blinkers discussed earlier can play a role in this contest as other members of the team become engrossed with 'their bit' and forget other activities:

> I had that problem the other day, there were five at the table and I just said, 'Excuse me you'll have to move, I need to get in there, that's where I stand'. And I even had a junior registrar that cramped me into a corner and I just said to him he could go round to the other side, I couldn't reach the surgeon to give him the instruments and that was, 'Oh, yes, yes, sorry'. The older scouts say, 'Push in, just shove him out of the way. Get your trolley in there – you need to stand there'. (Lee 480-490)

This field note also demonstrates how the nurses have to learn, indeed how they are taught, to protect their territory.

A nurse without a territory

One of the issues that many of the OR nurses raised as being unpleasant was being a 'floater', someone without a set area to work in. This nurse relieves other nurses for breaks and works in whatever role that nurse is fulfilling. The disjointed nature of the role and the lack of a specific territory to work in can be frustrating as this field note illustrates:

> One of the nurses is on her own in the set up area and she is flicking green material. There is carelessness in what she is doing that is not usually present and her movements are irritable. She flings the corners of a pack back as she opens it and flicks one

corner of the external cover hard with the back of her head as it rises back a little. She turns away before she sees whether it has settled into place or not. ' I'm everywhere today, just bits and pieces' she mutters. She bangs a tray out of the autoclave and huffs through her nose. (FN 2422-2433)

It is possible that the highly structured nature of the OR is attractive to the nurses and therefore lack of structure is uncomfortable for them. Losing control of a specific territory is an example of lack of structure. The structured work lives of the nurses while appealing to them is demanding. Therefore the nurses need a place to relax. This place is found within the supporting territory and is the tearoom.

The tearoom as a supporting territory

There are seven rooms in the supporting space but of these the single most important is the tearoom. While not a space attached to the operating room, the importance of the tearoom to the nursing staff arose frequently in the data. The tearoom appeared to be so integral to the culture and the way in which the operating rooms functioned that its role had to be considered in the study.

It is cultural territory that the nurses have colonised. Within the operating room the nurses are not able to express their personal reactions to the environment and the events occurring within it (a problem discussed in the 5th and 6th Layers). Once in the tearoom the nurses are able to set aside the role they play in theatre and freely express themselves. The tearoom can be a happy social space in which the nurses engage socially with each other. They may also use the tearoom to express anger, concern, frustration and sadness. None of these emotions is welcomed in the operating theatre and their expression can lead to disruption of the normal rhythm of the operation and result in longer anaesthetic times for the patient. The tearoom is an area where the nurses are permitted to express themselves as individuals:

> ... it [the tearoom] is a good area to blow a bit a steam if you've had a bad day or you're in a bad mood with one of the surgeons or anaesthetists to start with and then you can have a bit of a mouth off about it and we all probably do that in the tearoom because it is our area of, perhaps um, relief, you know our private area. (Rose 1008-1014)

In the tearoom the nurses are able to confide each other. Here they can openly ask for and receive support:

> I think the tearoom is a wonderful counselling session (laughter). And I think we're supportive of each other. I don't know what the others say, but I always think we are. If somebody's being given a hard time 'oh that so and so' you know, they take 5 minutes out and have your say and feel better and off you go and start again. (Anne 307-314)

The nurses use the tearoom as a sanctuary and the ability to do this freely can be critical to the smooth functioning of the theatres. It is one of a group of strategies that the nurses use to maintain a calm atmosphere in the operating room. Penny describes its use and the need for accompanying strategies:

> Well, usually you try, first of all try and get the person involved [in conflict] away to have a cup of tea and relax and talk, talk to somebody about it. But the idea then for the next operation is to try and see if you can ease the, smooth the role so that the same situation doesn't occur again. But it already occurred once and it occurs again it all sort of builds up into an even bigger, to be an even bigger problem than it was in the first place. (Penny 240-249)

Regardless of its territorial importance to the nurses, the tearoom is a contested territory. It exists in a shared space and the internal stairs open straight into it. It contains the kitchen, which is shared by all, and all staff members pass through the tearoom to enter the change rooms. The presence of non-nursing staff members in the tearoom affects the dynamics of the territory.

While the presence of an attendant or an aide does not appear to significantly influence the discussions in the tearoom. The nurses prefer the medical staff to use their own room, as the doctors tend to dominate tearoom conversation. Faced with this situation, the nurses encourage the doctors to use 'their' room:

> ... we don't always appreciate the ins and outs of the anatomy lesson in the tearoom while we're having our lunch ...you can say, 'well, you've got an office you can go and talk about that', but no they want to lounge back in the chairs as well. (Rose 1002-1007)

The entry of selected surgeons into the tearoom can empty the space of nurses with extraordinary rapidity. Knowing that a particular surgeon is in the tearoom may cause a nurse to choose to miss a break because there will be no release of tension

available and/or the source of the tension is present in the tearoom as in the following field note:

> A scrub nurse asks the scout nurse if she's coming to tea. The scout says, 'not if you know who's [a surgeon] there. Give me a ring if he's gone, then I'll come. I can't stand the man'. (FN 595-598)

Much of the time however the tearoom is a happily shared space and this seems to be particularly true when teams who enjoy working together take their breaks together. In the 6th Layer the notions of team-peace and team-play are discussed. These two elements of effective teamwork can be augmented by interdisciplinary social interaction in the tearoom.

Closure of the 1st Layer

The culture of the ORS can be understood partly in terms of space and how it is used and understood. Within the ORS three spaces exist that are determined by their proximity to the sterile field. The outer space, running around the perimeter of the department is the least clean area. Its purposes are to discourage free access into the ORS and to encourage controlled access once within the department. Signage and the red line symbolise the limited access to the ORS. Movement in the outer space is governed by rules related to 'traffic flow'.

The medial space includes the six operating suites (five functioning, one nonfunctioning). The operating suites comprise an operating theatre, the waste disposal or clean-up room and the anaesthetic room. There are multiple doors in each suite and the use of these is rule-governed. In order to keep the area clean the traffic flow through the doors is on a 'clean-to-dirty' basis. The exception to this is when the theatre is being cleaned.

The inner space is known as the 'core' and is the cleanest area in the ORS. It is used to store sterile equipment and can be used as a set-up area. Traffic flow here is minimal and only certain staff members have access to the core, the nurses are amongst this group.

The supporting space is an additional space identified in the study. It is situated one floor below the theatres and includes the change rooms, tutorial rooms, offices and the tearoom.

The ethnographic space is concerned primarily with the medial space with emphasis on the operating room. Cultural territories exist in this space and are accompanied by specific rules and rituals. The operating room forms a territory over which the nurses assume control. The patient can also be understood in territorial terms. The personal care of the patient (including hygiene) constitutes a territory that the nurses 'own'. The conceptualisation of a patient as two co-existing physical territories is also set forward. These territories reflect the anaesthetic and surgical elements of the operating room. The sterile field exists as another territory in the operating room. One further territory that is inextricably linked to the operating room is the tearoom that exists in the supporting space. It is a complex territory because it is in a shared space. The nurses use the tearoom to ask for and gain support, to vent their frustrations and to engage with each other socially. The tearoom therefore holds particular relevance to the study because it appears to be critical to the way in which the nurses act in the operating room. This line of argument is developed further in the discussion on teamwork presented in the 5th and 6th Layers.

The Second Layer: Operating Room Nurses and Time

Opening story

'Yeah, what?!' the patient, groggy and confused stirs irritably as the anaesthetist encourages him to open his eyes. 'Your operation's over now, everything went well' the patient peers owlishly at the anaesthetist and says, 'Is it over?' 'Yeah it's over, it went well.' Reassuring and brisk the anaesthetist, anaesthetic nurse and technician wheel the patient rapidly away towards the recovery room. Behind them the operating room is in disarray. Soiled green gowns spill over the top of an overloaded linen skip. Disconnected tubes and wires lie tangled on the floor. The sheet on the theatre table lies askew and a pile of used drapes lie in a dishevelled heap on top of a trolley. The nurses, silent and intense, begin to bring the theatre to order. Donning gloves, the scout nurse whisks the used drapes into the linen skip. The left over packet covers and used tapes disappear into a rubbish bag. She extracts the inner plastic lining from the suction bottles, checking the amount of drainage and disposing of the containers. The scrub nurse rapidly collects her equipment together, holding the tray of instruments up against her to extract the drape from underneath. She glances around the room checking for equipment, her mask and eye-visor still in place. Then, pushing her trolley she disappears through to the waste disposal room and begins dismantling her tray, preparing the instruments for their trip to CSSD. Back in the theatre the anaesthetic nurse has returned and is rapidly cleaning and restocking the anaesthetic machine. The scout nurse washes over the metal surfaces while the aide mops the floor and the technician repositions equipment and lights. The scrub nurse divested of her green gown, mask and eyewear comes in and helps the scout. Together they wash the theatre table and pat slide, readying it for the next operation. The anaesthetic nurse disappears into the anaesthetic room and is talking with the new patient. He links the IV line into the cannula the anaesthetist has just sited and checks the flow rate. The scrub nurse appears through the doorway leading from the Core, pushing a trolley loaded with blue packages. She pushes this to the scout and disappears out another door to the scrub sinks. The scout opens the outer layers of the packages exposing the interior green cloth covers. One package is opened fully to expose the gown and towel for the scrub nurse

to use. Moving to the door leading to the anaesthetic room the scout glances through its window, checking the progress within. She returns to tie up the scrub's gown. The patient is wheeled in and the scout pauses to assist the anaesthetic team and technician transfer the patient from the trolley to the table. The scrub nurse, her back to all the action, is setting up her instruments. The surgeon enters the theatre, nods to the scout nurse and asks generally, 'So are we all ready to go then?' He moves over to greet the patient and then heads purposefully out to the scrub sink.

Introduction to time

> *The passage of time is intimately familiar; the idea of time is strangely elusive* (Fraser 1987 p.3).

The ways in which time can be understood are numerous. Its character has occupied the minds of philosophers, physicists and playwrights alike. Despite this a definitive description of its true nature remains elusive. Time exists simultaneously as a seamless progression and as an interval. It can be measured objectively but is experienced subjectively. It has been described as both circular and linear and provides an organising framework for everyday life. Understanding time and acknowledging the existence of past, present and future are key to the process of change and development in humans. As Fraser (1987) argues, although all living things are affected by time, only humans can consciously draw upon things learnt in the past to survive the present and plan for the future. The mastery of these skills has rendered humans unique in gaining the freedom to control the use of time (Kümmel 1981). The integrity of a culture depends largely upon the recognition of past, present and future and the ability of its members to create a shared cycle or schedule of time-related activities (Fraser 1987). These social cycles (for example work time, play time, bedtime) provide a framework upon which members of the culture act out their daily lives. The ways in which people speak about time and act in relation to time both contribute to and are derived from the cultural understandings of it. Exploration of the temporal dimension of a culture therefore provides insight into the ways in which the members of the culture conceptualise their everyday world.

Time in the ORS

Within the ORS, time is so important to the daily working lives of the nurses that it is almost tangible. Its importance as an organising feature of daily work-life permeates the ORS and it is taken for granted by staff that an active awareness of time is implicit in all activities. This extends beyond the ORS into the surgical and day wards. The rigorous theatre schedules dictate when patients must present to the ORS, and how and when their preoperative care is planned and conducted. Activities such as fasting, premedication and hygiene are contingent upon when the patient is scheduled and when he or she is likely to be called for theatre. The wards therefore rely on the ability of the ORS to run on time. Likewise the ORS nurses rely on the wards to assist them to maintain the theatre schedules. Even the most fundamental activities such as determining staffing levels and matching equipment requirements to availability are largely dependent upon this. Exploring time and the way it is used and understood in the ORS provides insight into important elements of the culture. Therefore the following questions were used to guide the exploration of time as it relates to the ORS and the nurses:

- How is time perceived and understood?
- How is time used and why?
- If different understandings of time exist what is the relationship between them?

Within contemporary culture time has become pluralistic and recognition of this is critical to its exploration. People construct their day-to-day lives around conflicting temporalities, balancing the objective recognition of time (through reference to clocks) with its subjective experience. Daly (1996) suggests that time has been traditionally described as circular (the seasonal cycle), and linear (unidirectional movement from the past to the future). However he goes on to argue that other ways of understanding time exist. He proposes for example that time can be cast in terms of an economic metaphor and draws upon the work of Weber to establish the notion of time as a valuable commodity. Dürr (1981) considers that music is a form of temporal expression and Gadamer (1975) built on Heidegger's argument that recognition of self in relation to time was a condition for understanding. Time is a fundamental component of human intellect, contributing to the way in which each

109

person understands the world and yet the way time is experienced by each person is unique. As Rosalind in Shakespeare's *As You Like It* muses:

> Time travels in divers paces
> with divers persons. I'll tell you who time ambles
> withal, who time trots withal, who time gallops withal,
> and who he stands still withal.
> (Shakespeare, Act 3, Scene 2, Lines 301-4)

The pluralistic nature of time is evident in the ORS where it forms an intricate cultural framework upon which the activities of the ORS are enacted. Time in the ORS is variously understood as cyclical, linear (or chronological) and as an event-bounded commodity. Not surprisingly these different temporal realities place complex demands on the nurses, and many of these demands are in conflict. The disruption of time perception that many patients experience adds a further dimension to the nurses' work. This layer seeks to illuminate the dynamic interplay that exists between the various conceptions of time.

Circular time in the ORS

The common existential knowledge of time as cyclic (Fraser 1981) is reflected in the ORS. Like its spaces, time in theatre is functionally divided. Between Monday and Friday each day is divided into three main time periods, the morning list, the afternoon list and After Hours. These are overtly understood divisions and are common to many operating departments. Together these three time divisions provide a basic cycle on which the nurses plan their activities. During the morning and afternoon lists the nurses work in discrete teams attached to a specific operating room. Each team typically consists of one scrub nurse, one scout nurse and one anaesthetic nurse and teams are predetermined by the nurse-in-charge. Each team works through all the operations on the 'list' for a particular operating room. After Hours differs in that the teams are not as structured and no planned 'list' exists. Instead there is an 'emergency list' which is a flexible list of unplanned operations that cannot be referred to an elective (planned) operating list. Examples of the type of operation that would appear on this list include lacerations with controlled bleeding, reduction of fractures and appendicectomy. Weekends and public holidays are treated in the same way as the After Hours period. Life threatening emergencies

(known as Category 1s) take precedence in the ORS at any time and the Morning, Afternoon and After Hours emergency list will be placed in abeyance for them.

While the nurses strive to maintain the schedule and finish theatre lists on time, their ability to accomplish this successfully is constantly threatened. Dawes writes '... time management and OR schedules are two terms that are difficult to use in the same sentence without a resulting grin' (Dawes 1999 p.374). This is borne out in the ORS. The demands of time collide with the vagaries of people and equipment. Some patients may require more time than anticipated to prepare them for theatre; others may refuse to wake quickly from anaesthetic. Some will be brought in late from the wards and others will simply not turn up at all. Even when unconscious, people have the ability to make their presence felt. Theirs may be a more complex surgical challenge than anticipated for example, or they may have withheld information that will effect their reaction to anaesthetic agents. Staff members too can consume time, spending time teaching and learning, discussing changes in the operation plan or perhaps by not being in the operating room (or indeed the ORS) when required. Complex new equipment may present challenges to team members learning to use it and sterilising processes cannot be hurried to fit into time schedules. These and a myriad more demands jeopardise the schedules on a daily basis. This is largely because there are three culturally understood types of time, 'real-time', 'surgeons'-time' and 'lost-time' superimposed upon the cycle of the theatre schedule. These types of time provide complex and often contradictory demands on the nurses as they centre upon the needs of the ORS, the surgeon and the patient respectively. Their coexistence contributes to the way in which the nurses work and affects the way in which the nurses experience the operating room.

Real-time

Real-time is the second type of time that the nurses encounter and must respond to in the ORS. It is understood in chronological terms. That is, time is perceived as being linear and the working day consists of a seamless, unidirectional string of activities moving through the orderly sequence of past, present and future. Because of this the nurses are able to act, knowing what has already been accomplished and what there is still to be done. This is the type of time in which all the activities of the day are

111

taken into account. It includes the length of time that the whole operation will take, plus the in-between activities. These in-between activities include preparing a patient and operating room, collecting and preparing instruments and other equipment, cleaning and resetting an operating room between cases and at the end of a list. It includes tea and meal breaks, chats in the corridor and sundry meetings. Real-time then is the time it 'really takes' to get everything done. Individual patient needs are readily accommodated into real-time because they are integral to it. The varying amounts of time required to anaesthetise, position and recover patients are accepted as a matter of course. Patient safety and well being is the primary consideration in real-time as this field note illustrates:

> Preparing the patient has taken a long time (just over 1 hour) and the scrub nurse explains, 'well he's very sick. It's better to make sure that he's got all the lines in before he gets into trouble in here. You don't want to be mucking around with trying to get a central line in here. It's better to take your time and know that the patients safe.' (I.I. FN 3526-3533)

Unlike the patients, the needs or expectations of the surgeons, while accommodated by the nurses, are not always readily accepted. This is perhaps because many of the needs of the surgeons are a symptom of a third understanding of time. The nurses refer to this as 'surgeons-time'.

Surgeons'-time

The title of the third way in which time is understood in the ORS is drawn directly from the nurses' lexicon. 'Surgeons'-time' can be described as the amount of time that a surgeon believes the operation will take. A number of surgeons are notorious for planning their operations on the basis of surgeons'-time, consistently underestimating the time taken to complete an operation and allowing little or no time for unexpected occurrences. This can cause tremendous tension amongst the nurses as they plan and replan the day to keep up with the list and finish it within the allocated time. This understanding of time contributes to the pressure to shorten changeover times, the lack of understanding that many surgeons display for the preparation time and in the tightly packed operating lists. Lee and Rose both acknowledge the tension that exists between real-time and surgeons'-time. Lee reflects on surgeons'-time with some humour:

112

Well the nurses know the surgeons' time, that is a popular phrase and, 'I mean this is going to take an hour, but that is surgeons' time'. It is 3 hours for anyone else. Yes, I think so. I don't know why that it is, whether it is wishful thinking that they will get it done quicker. Sometimes they run into complications and that does happen but usually I think we can predict better, plus we account for the changeover time and the cleaning up and getting set up for the next one. I think some surgeons just think, 'Right, this will take an hour and a half, this will take an hour' and forget about all the bits in the middle ... I suppose some surgeons have no idea of what we actually do in-between cases because they go and write up the operation notes. They have never actually stayed and seen that everything gets wiped and the floor gets mopped and all that sort of stuff. (Lee 689-717)

Rose cuts straight to the crux of surgeons'-time relating it to the focus of the surgeon's activities, the operation, and relates an abortive attempt to address the problems surrounding the mismatch between surgeons'-time and real-time:

So, yeah they see operating time. This is really interesting, a few years ago when we tried to enforce that when they put in booking slips that they put the time of surgery, how long they estimate the surgery to take and they know that they only have 7 hour operation time so if you added up all that time it came to exactly 7 hours and say to them 'but you're doing an aneurism repair, it might take 30 minutes, 45 minutes, an hour even to put all the lines in that patient, doesn't that count in your [calculations]?' 'Oh but I've got seven hours of operating', and they were going to have 7 hours of pure cutting as opposed to the fact that the patient might have been a total crumble[18] and might have taken an hour to prepare her or him for that operation but that didn't come into their calculation of how much operating they could do on that day ... they don't see that as part of the surgery. (Rose 739-760)

Surgeons'-time differs conceptually from real-time in that it is a perception of time that is bound by the occurrence of two discrete events. These are the first incision and the final suture. It is therefore a fragment of time in linear time. This event-bound time is treated like a commodity. The nurses perceive that surgeons'-time is driven to a large extent by the desire to get as many patients through the operating list as possible. The surgeons have a specified amount of time in the theatre and the pressure is on to maximise its use for operating. This means that issues like settling

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[18] The term 'crumble' is explored in detail in 'Operating Room Nurses and Patients'.

the patient, preparing, anaesthetising and positioning can be construed as an unwelcome disruption. Within this event-bound understanding of time much of the nurses' work falls into a void, a situation that is not lost on the nurses:

> The [2nd] operation over, the surgeon once again leaves as soon as he has removed the instrument from the patient. Once again peacefulness descends on the theatre and nurses begin quietly clearing things away. The patient is soundly asleep and there are no signs of waking up. The anaesthetists check her and talk between themselves. They seem relaxed and happy. The nurses, unperturbed, clean up the instruments and part of the anaesthetic trolley. They are amused that this patient is not waking up. One of them explains happily, 'this happens. Some days none of them will wake up quickly and you get behind but there's nothing you can do about it.' She shrugs and tosses a drape into the linen bin. The surgeon comes into the room and stares at the patient. He glares at the anaesthetists who ignore him and keep talking in soft undertones with each other. The look is not lost on the nurses who cast amused glances at each other. He stomps out, returning minutes later to sit tensely on his stool staring at the patient. The nurse who usually scrubs for this list walks over to him and says, 'look, why don't you have a cup of tea while we set up. We'll get you when we're ready in here'. He nods at her and disappears. She laughs saying, 'some of them think that all this [gestures around the room] happens by magic'. The nurses all laugh quietly. (FN 4098-4125)

This field note illustrates the conflict between real-time and surgeons'-time. The induction and recovery cycle of the individual patient appears to have a natural rhythm that cannot be hurried. This natural cycle is not subject to the whims of surgeons'-time but is part of the real-time occurrences that must be considered by the nurses. The nurses nearly always make a better estimation of the time required to get things done than the surgeons do. They take into account the human being on the table and the particular idiosyncrasies that the person may exhibit. The emergence of the patient following anaesthesia is an excellent example of the unpredictable nature of people as many take a considerable time to manage their own airways and be in a position to leave the operating room safely. No amount of organisation or pressure from other staff members can hasten this process. The behaviour of one patient can bring the relentless driving pace of the surgical machine to a temporary standstill. As this latter-day David meets the Goliath of the operating room schedule, the nurses

114

can relax and enjoy their work, the pressure is temporarily off as the following field note illustrates:

> As soon as he [surgeon] has finished [1st operation] he throws the last instrument on the tray, snaps off his gloves and leaves the theatre. No one says anything. The anaesthetists are intent on the patient. The nurses wash the child's face and take off the drapes, covering the child with a blanket. The child shows no inclination to wake up and sleeps resolutely on. The whole room becomes warm and peaceful. The nurses clean up quietly and the anaesthetists give the impression of just patiently waiting it out. After about three minutes the surgeon bursts into the theatre, looks at the patient and huffs. He leaves again. Another couple of minutes he's back, the patient is asleep. He plonks himself down on a stool and stares intently at the child. The nurses ignore him, as do the anaesthetists. The nurses have cleared the instruments, the trolleys and the anaesthetic trolley has been partly tidied. The forms are all in order. The nurses are now all standing watching the child sleep. They are talking softly with one-another. There is no sense of pressure amongst them. The surgeon gets up off the stool walks over to the patient stares at the child, swings around and walks out of the room. In another minute he's back. Again, he plonks down on the stool and stares intently at the child. He says to one of the nurses, 'what's next?' She tells him what the next operation is. He gets up and stumps out. This time the nurses are amused. They talk with one-another and plan the next operation. The scrub is learning from the scout. As they talk they absently touch the child's feet, cupping them in their hands. One places her hand so that it curves over the child's tiny leg. The child stirs and the nurse says, 'oh there we go.' (FN 4023-4056)

As the previous field note suggests, the tension between real-time and surgeons'-time reflects the tension that exists between their diametrically opposed ideological foundations. That is, care based on a holistic model and care based on an economic model. It would appear that the way in which real-time is conceived and understood is a product of the holistic model (explored in the 4th Layer), whereas surgeons'-time has its foundations in the economic view of the world. As has been argued, Daly (1996) contends that time has become a commodity and this is evident in the ORS where the surgeons seek to maximise the amount of operating they can do in the limited amount of time they have. Time in the theatre is a precious resource and any erosion of the available time can be a source of great frustration. The nurses work hard to find a balance between real-time and surgeons'-time and are often caught between the demands of the surgeon and the demands of everything else. Ironically,

by attempting to meet all the demands seamlessly and simultaneously the nurses perpetuate the existence of surgeons'-time. As Barry says, '... there are so many surgeons who just assume it all happens because they've got a lot of people pedalling like mad to make sure it's all happening (Barry 138-141). In saying this Barry also suggests that the nurses contribute to the invisibility of their own work. Instead of ensuring that all members of the surgical team acknowledge each other's work, the nurses continue to work quietly 'behind the scenes'. This argument is developed further in the 4th, 5th and 6th Layers. The strained dynamic existing between real and surgeons' time may be placed under further pressure by a fourth way in which time is perceived in the ORS.

It has been established that the needs of the patient influence the way in which the nurses in the ORS use time. The final understanding of time involves the tacit recognition of the disruption to (or loss of) time-perception that patients experience in theatre. For the purposes of this thesis this will be called 'lost-time'. While it could be argued that lost-time falls within the rubric of real-time, lost-time adds a further unique dimension to the work of the nurses and potentially impacts on real and surgeons'-time. Therefore it is explored as an entity in its own right.

Lost-time

Integrating past, present and future is for most people an effortless and subconscious activity (Fraser 1981). There are three fundamental steps that people must achieve to acquire this everyday but nonetheless sophisticated understanding of time, an understanding that is embedded in western culture. These steps are the ability to be concerned with the future, the ability to remember the past and the ability to integrate the former with the latter. Situating oneself in the present, that is within the context of one's history and future expectations, provides a person with a sense of self and a sense of being-in-the-world[19]. It is this taken-for-granted capability that is interrupted during the process of anaesthesia, leaving patients bewildered and vulnerable when they awake in the recovery room. As Cohen argues 'the order

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[19] This is profound example of the critical relationship between time, being and understanding in both Heideggerian and Gadamerian philosophical hermeneutics.

'past→present→future' may cease to exist. What remains is an omnipresent in which there is neither a before nor an after … the river of time is frozen' (Cohen 1981 p.271).

Transient loss of time perception appears to be well recognised by the nurses and is of great concern in the ORS. When Jill describes what happens to the patients during this period she says, '… they think, blur and fade and they just can't remember' (Jill 703-704). The nurses and anaesthetic staff recognise that the struggle for time integration is potentially distressing for the patients. This is evident in the way in which nurses provide pre and post anaesthetic patient care. While not part of the cultural language, an understanding of lost-time is implicit in the activities of nurses and anaesthetists who work together to ensure safe passage of the patient before, during and after anaesthesia.

In the pre-operative period the anaesthetic nurse plays a significant role in preparing the patients for the disorientation that they may experience postoperatively. The calm explanations, intensified eye contact and gentle touching of shoulders and foreheads are techniques used by the nurses to calm and quieten the patient prior to anaesthetic. This not only eases the induction phase and promotes the effectiveness of the anaesthetic (Groah 1990) but it also prepares the patients for their emergence from anaesthesia. With their personal river of time frozen, many patients 'wake up' in the same state as they 'go under'. It is not unusual for a patient who is aggressive or crying before the operation to emerge aggressive or crying after the operation. There are also risk management reasons for making sure that the patient is calm. As one RN notes, 'The D & Cs are the worst. They go in crying and there's nothing you can do about it and you know that they're going to have a laryngeal spasm and intubation will be really hard and then they come out crying' (I.I. FN 5594-5598). While some preparation is made for the patient's anticipated postoperative sense of disorientation, it is in the immediate postoperative stage that the nurses' activities clearly suggest a tacit recognition of the importance of this experience to the patients' well being.

Estimation of time span is altered by anaesthetic, orientation to time is confused and the sense of continuity is broken. Unable to remember what has happened to them patients recovering from anaesthetic are unable to immediately integrate experiences enabling them to orientate themselves to the present context. The ability to self-orientate is a standard measure of a patient's recovery. A person who is unable to integrate will be described as 'not orientated to time or place' a phrase that recognises the inexorable link between space and time, and the importance of orientation to both for the well-being of the patient. In the ORS the orientation to space is complicated because the recovery room is a mirror image of the waiting area. The loss of sense of time through anaesthesia compounds the disorientation. Questions such as 'where am I?' 'what time is it?' and 'is it over yet?' are common as patients struggle to gather enough information about time and space to situate themselves in the present. The frequency with which the nurses and anaesthetists pre-empt these questions with a recovering patient using phrases such as 'you're in Recovery [the recovery room]' and 'the operation's over' suggests that the staff are well aware of the need to provide enough information to help the patient reorientate. It also suggests that they recognise that it is information about both time and space that forms the basic platform for reorientation.

The patients' experiences of lost-time can impact heavily on real and surgeons'-time. A patient who emerges confused and anxious can absorb the nurses' time and unwittingly delay the next case. This is more likely to occur in the After Hours period when the same team of nurses staff the OR and the recovery area. During the Morning and Afternoon lists patients are moved rapidly to the Recovery Room. Although there is little doubt that any disturbance to the fast paced schedule of the ORS poses a problem to the nurses they regard patients' confusion with humour and compassion. This dynamic is addressed further in the 4th Layer where the relationship between nurses and patients is explored.

Closure of the 2nd Layer
The ORS nurses are caught in an intricate temporal web. The ORS itself functions on a standard daily cycle consisting of the Morning list, the Afternoon List and the After Hours period. Superimposed on this simple framework are three potentially

conflicting temporal realities, real-time, surgeons'-time and lost-time. In real-time the nurses perceive time in the ORS as being linear. This time is unidirectional, consisting of past, present and future and is the time it 'really' takes to get everything done. The term surgeons'-time is used by the nurses to denote the surgeons' perception of how much time an operation is likely to take. Because it does not account for all the ORS activities and allow for perioperative complications, surgeons'-time is almost invariably an underestimation of the time required. Because of this real-time and surgeons'-time present the nurses with conflicting demands. Further complicating this dynamic is lost-time that is the transient disruption of time-perception experienced by the anaesthetised patient. The patient's struggle to reintegrate time and space (in other words to reorientate to time and place) must also be supported by the nurses.

The way in which people orientate themselves in space and time is unique to humans. Exploration of the two coordinates upon which the ORS nurses organise their day-to day lives has been the concern of the first and second layers of the ethnography. The third layer is a semiotic interpretation of the important objects that the nurses use to go about their daily work lives.

The Third Layer: Operating Room Nurses and Artefacts

Opening story

The scrub nurse is meticulous, her instruments arranged equidistant to each other, row upon glittering row. She touches each lightly with her gloved finger as she and the scout nurse count them off. Satisfied with the 'count'[20] she passes the prep dish to the registrar so he can get started. The surgeon turns quickly from where he is standing and picks up an instrument straight from the tray. The scrub nurse's face is impassive as the used instrument is thrown onto the tray knocking the regimental lines of instruments out of order. The registrar tries to take an instrument off the tray and the scrub stops him. 'But you let him do it' the registrar indicates the surgeon with a nod. 'Yes' says the scrub nurse tartly, 'and when you're a consultant you can too'. Forty minutes later the operation is completed and the patient is now the sole territory of the members of the anaesthetic team who are coaxing her to take a breath. The scout nurse steps smartly up behind the surgeon and undoes his gown. The registrar wanders over to her and turns his back so she can untie his gown as well. But she walks away and busies herself, assisting the scrub nurse to clean up, and he has to ask the medical student to untie him. A nurse ducks his head through the door from the anaesthetic room, holding a mask over his nose and mouth. 'You're okay, we've finished' the scrub nurse reassures him as she glances over to him. He removes the mask scrunching it up in his fist and wanders in to the room to speak to her about meal break relief. As they talk she continues to gather and sort her instruments ready for cleaning.

Introduction to artefacts

The emphasis of interest in ethnographic research is the activity of the people who inhabit the culture. In order to perform their day-to-day activities readily these people use specific objects to aid them. The semiotic interpretation of these key physical objects within a culture is as illuminating as the interpretation of its spatial and temporal aspects. It has already been argued that as important parameters for

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[20] The surgical count is the procedure used to account for such things as instruments, swabs, blades and needles. The count is discussed in the 5th Layer.

cultural action and expression, time and space and the interplay between them provide a context for human action. It is, however, the cultural artefacts used by the members of the culture that enable people to act purposefully within the spatial and temporal parameters. These physical objects are representative of a culture and have symbolic significance to it (Spradley 1980). They imbue actions and activities with cultural meaning. Gadamer writes that these objects as 'units of our experience of our world that are constituted by their suitability and their significance' become part of the language of the culture and thus are constitutive of it (Gadamer 1975 p.456). Spradley (1980) and deLaine (1997) reflect this suggesting that, the cultural knowledge that accompanies each artefact imbues that artefact with meaning. That is they reciprocally create and sustain one another.

Artefacts in the ORS

Drawing upon the work of Blumer, Spradley argues that the way people act in relation to objects is contingent upon the shared symbolic meaning that the object has for them. Further, he argues that this meaning is arrived at through social interaction with others through an ongoing interpretive process (culture giving meaning to the artefact and the artefact giving meaning to the culture). Kessler (1987) concurs developing the argument by suggesting that as it is the ability to use tools and language that sets humans apart from other animals, shared meaning is contingent upon the two and will evolve as tools and language evolve. Within the ORS this becomes evident as different types of surgery become possible. The coining of nicknames such as Lapchole[21] suggests that the mystique once accompanying fibre-optic surgical tools (and the related surgery) has rapidly given way to an easy familiarity with what is now a commonplace technique to the ORS team. Much of the nurses' daily work involves preparing, using and maintaining and it is here that some of the more ritualised practices within the ORS can be observed. It also appears that the nurses' status is, at least in part, linked to their activities with specific important artefacts. For example a nurse who demonstrates technical proficiency with the surgical instruments is held in high regard. Through the discovery of the symbolic meaning of significant cultural artefacts (such as the

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[21] Pronounced 'lap collie' and meaning laparoscopic cholecystectomy.

surgical instruments), further insight can be gained into the everyday world of the ORS nurses.

The many spaces of the ORS overflow with equipment. Suction bottles, diathermy and anaesthetic machines, stools, trolleys, linen bins, clocks and X-ray viewers line the walls of the operating room. Two giant lights, their jointed arms cantilevered across the ceiling, overhang the centrally placed theatre table. Two ceiling mounted columns proffering an array of colour coded attachments flank the lights. The walls of the anaesthetic rooms display a honeycomb of shelves stocked with needles, syringes, IV cannulas and all the accompanying plastic-wrapped paraphernalia. A hook hangs from a ceiling track ready to receive an IV flask. The sheer volume of surgical gadgetry is overwhelming.

As a technological space the ORS is rich with artefacts upon which the activities of the theatre are almost entirely dependent. Two types of artefacts appear to be particularly germane to an exploration of the culture of the ORS in relation to the nurses. They are the distinctive theatre wear and the instruments. Both the red line and the sign at the entry to the ORS that reads 'Stop. Theatre wear must be worn beyond this point' can be considered to be artefacts but their significance to the culture has been established in the 1st Layer therefore they will not be rediscussed. Both the theatre wear and the instruments are artefacts that play significant roles in the daily routines and rituals of the nurses' practice. One role of theatre wear is encountered immediately upon entry into the aptly named change-room, a room that acts as a portal of entry into the ORS.

Theatre wear must be worn: a rite of passage
Pushing open the front doors of the ORS reveals a world filled with people dressed in baggy light-blue tops and pants, hair carefully concealed under an astonishing array of colourful caps ranging from elegantly wrapped turbans to brightly decorated shower cap-like objects. While clogs and joggers adorn some feet, others sport white gumboots and still others are concealed in light blue paper overshoes. There is little distinction between the clothing for males and the clothing for females. Once again the functional nature of the ORS asserts itself. Theatre wear is unabashedly designed

for comfort. While their utilitarian uniform is taken-for-granted by the resident nurses, it can be source of fleeting disappointment to the uninitiated visitor. One RN consoled a visiting student who was glumly surveying her reflection in the mirror, saying 'Don't worry, you look fine. We're all dags in here' (4788-4789).

Membership of a cultural group more often than not entails looking like a member of that particular group. Polhemus & Procter (1978) argue that as a person joins a social group that person must be taught to emulate the style of the group in order to identify with it. Putting on the theatre uniform is a minor rite of passage that people new to the ORS must undergo in order to proceed into the ORS. There is a sense of ritual that accompanies the process and while this may appear on the surface to be a somewhat frivolous observation its process and endpoint are significant. This is a process of initiation that culminates in gaining entry into the ORS. It is composed of an orderly series comprising four phases of discovery and transformation:

1. discovering the expectation to divest 'outside' clothes;
2. discovering the new body size;
3. discovering the social meaning of 'inside' and 'outside' shoes, and
4. discovering and accepting the 'unfamiliar' familiar self.

The realisation that all clothing except underwear must be removed comes as a surprise to many uninitiated visitors. Personal style must be sacrificed to the anonymity of the cultural dress. It is tantamount to subsuming one's signature into the corporate title of an anonymous organisation, only in this instance it is the personal signature of clothing style that is surrendered. The choice of tops and bottoms must be made and the familiar sizes of 10-22 do not exist. Instead visitors must consider their bodies in terms of small, medium, large and extra large. If there are members of the ORS present, sizing is in terms a coloured band denoting size on the necks and ankles of the tops and trousers respectively ('You're probably a red, although the trousers might be too long')[22].

Discovering that only the resident staff of the ORS wear 'inside shoes' is the next step. The rows of clogs and joggers are not for general use. Blue paper overshoes

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[22] A registered nurse introduces me to 'my size' during my orientation to the ORS.

must be applied over the visitor's 'outside' shoes and will clearly signal the outsider status of the visitor. The final step and one that strips people down to the bare essentials is the donning of the theatre cap. Hair pulled back and tucked under the elastic, faces exposed without the softening effect of hair, people become different[23]. Once dressed, they move to the basin to wash their hands, a move that gives them the opportunity to peer intently at their unfamiliar reflections in the mirror. Hair and caps are meticulously tucked and adjusted in an attempt to achieve a more familiar, or at least more flattering look. This activity soon ceases with the realisation that little aesthetic improvement can be achieved. Once their new look has been accepted the novitiates are ready to move to the door leading into the ORS itself. The first rite of passage has been negotiated and they have gained the right to enter the ORS. The neophyte has transformed from an individual into somebody who looks like a member of the ORS team. While this change is not in itself a vehicle for acceptance into the team it places the 'outsider' on the threshold of the process of earning membership[24]. The angst experienced by newcomers when confronted with this rite of passage gives way over time to casual unconcern as the nurses become familiar with the ORS and changing becomes a mundane routine. There is no longer a sense of miraculous transformation and the garb of the 'theatre-self' soon fits more comfortably. However for the newcomer, even once inside the ORS their attire will still mark them as outsiders to the ORS. The overshoes and paper caps indicate their status as visitors and their uniform is at this point unadorned.

At this stage the new person is complying with the cultural rules by dressing in only the essential theatre attire. The uniform worn by all members of the ORS team can be seen as a manifestation of the predominance of teamwork over individuality[25]. Therefore it is unlikely that a new person would assert their individuality be adding a personalising touch to their outfit. Instead they seek to be subsumed into the team by wearing only the clothes that conform to cultural expectations. By doing this they

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[23] I enjoyed observing students during this experience watching them search their own and each others unfamiliar faces and laughing at the change that the theatre wear makes.

[24] This process is explored in the 5th and 6th Layers.

[25] This is discussed in detail in the 5th and 6th Layers

can achieve a degree of invisibility by becoming absorbed into the familiar 'theatre-scape'. The theatre wear links them absolutely to the specialised work of the ORS. It advertises their belonging to the area and defines the roles that they will play. New visitors dress in a manner that is reassuringly familiar to the ORS staff. It is a symbolic gesture of their willingness to fit in and play their part in the ORS culture. Polhemus and Procter (1978) term this type of symbolic clothing 'antifashion', the purpose of which is to symbolise sameness and safety. This is reflected in the RN's comment 'we're all dags in here' alluded to earlier, which emphasises the inclusive symbolism of the theatre clothing. Within the ORS the theatre wear is symbolic of the well-ordered and highly controlled nature of the department. In common with all professionals' uniforms, the theatre wear also acts as a physical manifestation of the wearers' credentials for carrying out their roles in the operating department (Langner 1991). By donning the theatre wear in its unadulterated form, new people demonstrate firstly that they have the professional background to gain access to the ORS and work within its team, and secondly that they are willing to enter the ORS on the terms of its culture. The following note from the research journal[26] shows the converse behaviour when a person does not seek membership of the team. It illustrates the disruptive effect of inappropriate dress when a clearly restricted area of the ORS is breached:

> The IT support man has finally come to the ORS to check the computer is networked. He comes through the doors of the theatre, walks straight across the red line, under the sign stipulating that theatre attire must be worn, past the uniformly attired ORS staff and around behind the waiting area desk. He is wearing street clothes and the nurses and ward clerk exchange scandalised glances. He is oblivious to the import of his actions, the blue uniforms, and to the scandalized response of the staff. (Research journal)

Not only does the theatre wear symbolise membership or attachment to the ORS team, it also appears to allow the team members to work comfortably together. A clear illustration of this occurs when the members of the scrub team are concentrating on the operation site with such intensity that normal social barriers

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[26] This was not a formal observation but was entered into the combined journal as a point of potential interest.

125

collapse. Shoulders brush, foreheads touch and fingers make fleeting contact. The physical intimacy encountered by the members of the operating team appears to be, at least in part, counterbalanced by the de-personalising effect of the theatre wear.

Although theatre wear advertises belonging to the ORS team, some subgroups within the ORS define themselves by varying the standard attire. Developing a particular style to demonstrate belonging to a particular group and differentiating from other similar groups is a cultural behaviour noted by Polhemus & Proctor (1978) and Barnard (1996). It is an activity that is engaged in by the ORS nurses. As the largest sub-group in the ORS the nurses seek to escape the anonymity of their uniform by enlivening it with colourful and in some instances ornate adornments. Hair coverings, eyewear frames, personalised socks and colourful pens held on matching strings around their necks appear to be of particular significance to the nurses in this regard. Some also own a personalised theatre jacket. The clogs worn by many of the nurses set them apart from other groups who wear different footwear, although running shoes are becoming increasingly popular. Although they are varying the standard outfit, the nurses do this within the informal parameters set for members of the nursing sub-group. In this way they are able to express their individuality as well as their membership of the team. The latter is achievable because the variations of one sub-group will not match the variations of another. For example the orthopaedic surgical team are recognised by their tendency to wear balaclavas as opposed to the shower cap or bonnet-style hair covering. By varying their outfits each subgroup in the ORS maintains their professional identity while still retaining identification with the wider ORS team.

Further differentiation between team members is made once inside the Operating Room where additional layers of theatre wear are required. Masks, eye protection wear, gowns and gloves are also an integral part of the costume of the OR. Newcomers must learn rules governing skills, rituals and rituals associated with different pieces of theatre clothing or they will not be able to participate in the central activities of the ORS. These rules include:

- Gowning up and tying routine and its related safety and social implications;

- Untying ritual and its related social implications;
- Communicating while wearing masks, and
- Recognition of the cuing role of articles of clothing (most notably the gown and gloves).

Gowning up

The ways in which the theatre clothing is used is rich in routine (characterised by purposeful activities) and rituals (characterised by symbolic acts), but none more so than the activities involving the sterile gowns. Routine can be observed in the way in which 'gowning up' is undertaken, and ritual can be observed in the way untying is done. While the practical need to maintain sterility underpins the tying routine, the prevailing social order appears to govern the untying ritual. Both activities provide an opportunity for intimacy but whether this opportunity is acted upon appears to be dependent largely upon the atmosphere in the operating room and the team relations. It is interesting to note that while far greater opportunity for intimacy occurs when the gowns are put on (because of the degree of assistance and physical touching that occurs during the process) observations suggest that this activity is treated as a functional routine that must be completed to enable the real business of the operating room (i.e. the operation) to commence. It appears that it is more likely that opportunities for expressing intimacy will be acted upon after, rather than before, an operation and may occur because the tension that exists at the start of an operation has dissipated and staff members can relax with each other.

Tying and untying between the nurses appears to be a functional activity that facilitates the central business of the operating room. This is also the case for tying during gowning up between nurses and doctors. However untying gowns between nurses and medical staff is laden with social meaning. It is not constrained by the demands associated with commencing an operation and is an activity that is used to express personal regard (good or bad) and to emphasise the social order of the ORS. The following field note describes the functional process of tying up a sterile gown nurse-nurse:

> The scrub nurse comes in and the scout nurse moves over to her.
> The scrub dries her hands opens the sterile clothing and dons her

127

gown. The scout opens the gloves and tosses them into the sterile field, balling the paper and throwing it in the bin. She turns and slides her hands under the shoulders of the gown and eases it over the scrub's shoulders then she ties the gown. Simultaneously the scrub dons her gloves and wraps the end of the green gown tying tape in the sterile glove package so that the tape is protected. She then holds the twist of paper at the proximal end and waggles the distal end of it at the scout. The scout carefully takes hold of this end and the scrub pirouettes pulling the cord neatly out of the twist of paper as she turns. She can now tie up her own side ties. (FN 3208-3223)

This field note is contrasts with the opening story of this Layer that illustrates how the untying ritual serves to maintain and emphasise a social order in the OR. The silent refusal by the nurse to untie the registrar's gown provides an example of the subtle subtext that exists when messages are conveyed through actions rather than words. The subtlety of this covert communication ensures that the person receives the message but is unable to react because there is nothing tangible to react to. Significantly the action tends to take place between nursing and medical staff.

Conversely the untying ritual as a time of fleeting intimacy can be used to express warmth and respect. In the following field note the team has worked well together and have enjoyed a relaxed and peaceful list together. The nurses hold the surgeon in high regard but have become increasingly anxious during the last operation because he appears to be exhausted. He has a further operation to complete:

> The scout nurse undoes his gown and as he turns to thanks her she looks with searching concern into his face. He smiles down at her. 'I'll just have a cup of tea' he seeks to reassure her. (FN 3882-3884)

The regard that this nurse and surgeon have for each other is evident and there is little need for discussion between them as they share a tacit understanding about his fatigue and her anxiety. The familiarity they have with each other contributes to this level of communication. The following field note illustrates the untying ritual in a team that are familiar and friendly with each other but includes a resident who is tentatively seeking acceptance:

> The scout moves in and undoes the registrar's gown. He undoes her gown and leans over and undoes the scrub's gown. The resident glances around and catching the scout's eye, asks her to

undo his and turns around so she can reach his back. She smiles
and undoes the top knot for him. (FN 3155-3160)

It can be seen from this that the resident is in the process of being accepted into the team, as he still has to ask to have his gown untied. Familiarity of team members with each other also plays an important role when the team is communicating while wearing masks.

Communicating and masks

Clear communication within the ORS is of paramount importance. The theatre masks that prevent people watching the formation of words while they listen to them complicate communication. Part of gaining acceptance into the culture is learning to communicate clearly while wearing a mask. This not only involves speaking clearly so that the need to lip-read is eliminated, but also involves developing an 'ear' that will enable the person to hear even the lowest mumble. During the fieldwork one RN pointed out a graduate nurse who was noticeably quicker to respond to a softly spoken surgeon's requests than she had been the previous week. 'Look, she's hearing better' (FN 4826). Mumbling is a source of tremendous frustration for the nurses because it lengthens the time taken to respond to a request and can lead to the development of a tense and unhappy atmosphere. This is particularly true if the mumbling is perceived as deliberate and obstructive (FN 2074-2087).

In order to overcome the limitations presented by masks, the nurses develop their ability to communicate non-verbally. Two circumstances combine to ensure that this is predominantly through eye contact. Body movement during an operation is constrained by the tightly packed territories and the need to protect the sterile field. Further the all-concealing theatre attire means that eyes are often the only part of a person that can be seen. While the ORS staff members learn to use eye contact with tremendous effect, both as a purely non-verbal message and as an adjunct to a verbal message, they acknowledge that patients may not be comfortable with this form of communication. Many of the nurses will remove their mask while talking with a patient. This is particularly the case prior to entering the operating room. In the following example the scout nurse is introducing herself to the patient:

> She touches his arm, takes down her mask and introduces herself gazing into his eyes. She says something quietly to him and he laughs up at her. (FN 26-28)

Given the nurses' recognition that the mask creates a barrier to communication it is interesting to observe that even when the operation does not warrant the use of a mask the nurses continue to wear them (FN 4080-4084). In the following field note the registrar has written the wrong operation down on to the operating slip and the nurses have prepared accordingly. The surgeon is extremely irritated:

> 'Well it's an X operation!' says the surgeon 'and we'll need the light source!' He gives an exasperated sigh and snaps on a pair of gloves, he does not gown. None of the medical staff are wearing masks. All of the nursing staff are wearing masks and continue to wear them even in light of the revised operation. (FN 4956-3961)

Coupled with the inconclusive research into the effectiveness of the surgical mask in preventing surgical wound infections (Lipp & Edwards 2002; Riley 1997; Orr 1981 and Ritter, Eitzen, French & Hart 1975) this field note suggests that the mask is a cultural tradition and the wearing of it is ritualised. The importance placed upon safety by the nurses is reflected in their rigorous practice of numerous risk management strategies, some of which are habitual rather than evidence based. As one of the nurses explained 'oh we're just in the habit, I'd feel wrong without one' (FN 4080-4085). It is possible that wearing a mask is an example of the nurses' accustomed adherence to rules and standards as a way of reducing risk[27] even though there is little evidence to support the practice. Because of this the nurses are in a difficult position when trying to influence medical staff to observe dress rules. The medical staff members tend to be more flexible about wearing masks, taking the type of operation into account. While the nurses accept this, albeit uneasily, they find it very hard to accept flexibility with the occupational health and safety requirement to wear eye-protection. The field note from the first layer in which the medical officer is squirted in the eye with blood illustrates the nurses' responsibilities in promoting safety, their lack of authority in enforcing safety requirements and the disquiet this anomaly creates for them.

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[27] Discussed in the 5th Layer.

Although the nurses must tolerate some flexibility over the use of masks, the adherence to wearing gloves appears to be universal. This may largely be due to the body of evidence that supports the use of gloves as a way of reducing risk of infection to both patient and health professional. The consistency of their use since WWII (Cooper & O'Leary 1999) may also contribute to this. Gloves also appear to provide one of the significant cues in the ORS.

Gown and gloves: articles of theatre wear as cues

By gloving up a person in the ORS sends a clear signal of intent to act and surrounding people are expected to respond to this cue. For example when surgeons don gloves the operation is about to begin. When the scrub nurses don gloves the trays or instruments are about to be unpacked, set up and counted. When scout nurses don gloves an item from the sterile field (eg. a specimen) must be ready to be passed out to the unsterile area. Occasionally the recognition of the cue to act can raise consternation:

> The patient is positioned with her feet in stirrups. The medical student who is present dons gloves and the nurses begin to look uncomfortable and tense, moving their bodies in readiness to intervene. He moves into the patient and the nurses watch him intently, leaning closer. He palpates a swollen area on the patient's buttock and moves back ungloving immediately. All the nurses relax. (FN 4250-4257).

In this example the vulnerable position of the patient and the gloves cued the nurses to the possibility of an unauthorised examination. Their attitudes suggested that they recognise the potential need to advocate on behalf of the patient and possibly their discomfort with this.

The sterile gowns send a different cue to the gloves even though they are both part of the scrub attire. The gown is symbolic of the sterile field and it acts as a cue to differentiate scrubbed members of the team from unscrubbed members of the team. It forms part of the sterile field and provides a cue to the extent of that field, the front of the gown being considered sterile and the back considered unsterile. Thus the gown cues people to the way they should conduct themselves around the person wearing the gown. The front of this person must be given a wide berth to protect

131

their sterility. They will require some assistance to complete dressing, as their ties will need to be done for them. For people outside the theatre looking in, the presence of theatre gowns means that entry into the operating room is limited as an operation is in progress. The gown is the single symbol for all these cues as the eyewear, mask and even the sterile gloves can be worn by any member of the team. Linked inextricably to this symbol of sterility and operating is the second of the central artefacts in this layer, the surgical instruments.

The instruments as artefacts

The surgical instruments are as representative a tool of the operating room as the theodolite is of surveying. The instruments are one of the clearest symbols of the culture. Their only function is to perform specific tasks in an operation. At once beautiful and hideous the glittering streamlined instruments are designed to cut, grind, saw, crush and clamp. There are hundreds of instruments. Some are similar but each is unique in its look and function. While the surgeons use them, the instruments form a significant part of the scrub nurses' role and territory. As Barry says:

> There's whole masses of sets of instruments come in. They have to be all marked off meticulously and they have to be prepared by CSSD and has to be all correlated with everything else and you know, you know, and it doesn't just happen and ah, you know to get the infinite detail with which the nurses attend to, to get to the point where we actually do the operation. (Barry 143-151).

Having responsibility for the instruments is a source of pride and as suggested in the following interview excerpt is a way in which a nurse's technical ability can be judged. Anne suggests that:

> You have to be technically adept to some degree anyway to be able to put instruments together and trays together and be able to find instruments and catalogues to match what the surgeon requires. (Anne 589-594)

The cultural significance of the instruments is apparent. They provide the nurses with a critical and readily observable role, a role in which the nurses have control and authority. The scrub nurse is a gatekeeper, carefully limiting access to the instruments and the sterile territory. An extreme form of this protectiveness is noted in the field notes:

132

...the surgeon has asked for a piece of equipment that the scrub nurse hasn't set up. The scrub says to the surgeon, 'well can you use that? It's worth a bit' he's half joking, half serious. The surgeon is a little taken aback but says that he's used it before. The scrub nods knowingly 'yes and you bent it' but he asks the scout to fetch it. (FN 1760-1766)

While the previous example is an extreme one, the nurses are legitimately protective of the trolley of instruments that they have set up. This territory is the nurses' territory. It is an idiosyncratically created territory and the scrub nurse carefully regulates entry into it.

The instrument trolley: the fortress

Prior to an operation the scrub nurse stands, back to the theatre table rapidly counting out long displays of sterile instruments, constructing logical and intricate patterns on the instrument trolley. Each pattern reflects an anticipated stage in the operation. The monotonous under-drone of the 'count' beats out the time, a roll call for each instrument, each suture, and each gauze. Once the operation commences the scrub nurse draws the trolleys close into the table creating an intimate, green and impregnable fortress (see Illustration 1). Nurses, doctors, students and technicians jostle for space amongst the suction bottles, diathermy machine and a myriad pieces of sundry equipment that have been pushed in towards the sterile field. The scrub nurse's constant vigilance protects the territory from within the sterile field, while the scout protects it from without.

Illustration 1: The fortress: the scrub nurse at work

Standard patterns are used by some of the nurses to set up the instruments but many are guided by personal preference in the way they set up. In this way the nurses know exactly what they have on the trolley and can readily account for the instruments. Anne explains:

> ... I setup, because I've been here for such a long time. I set up in a similar manner most of the time so I know exactly where I've put my things anyway, and if I change it then I know I've changed it.
> (Anne 517-521)

However, while personal patterning assists the individual nurse, the problems associated with the idiosyncratic layout can be seen when one nurse tries to adjust to another's patterning. In the next field note the scrub nurse is working with a tray that another nurse has set up:

> The operating circle (which is usually pretty tightly around the table) is wide apart and not patterned easily for her [the scrub nurse]. She cannot reach out and get what she needs and pass it smoothly. Finally she moves her trolley of instruments around to her side and resets some of the instruments. The scout nurse

explains what she is doing. 'She's uncomfortable. Elina sets up her instruments differently. Joanna sets up with all of that [indicates instruments] on that side, so this is all backwards for her. It makes it hard ... we all set up differently really. Other places like Sydney, Melbourne, Adelaide might have standard ways of setting up. When someone starts here they are shown how to set up but then they see many ways. I tell them to choose what suits them and then stick to it. But then, when you've chosen a way it's important to set up the same every time because if you need to reach behind you to pick something up then [reaches behind her to mime picking up the right instrument].' (FN 2132-2161)

It can be seen from this field note that the scrub nurse's set-up acts as a territorial signature further limiting easy access to the already heavily protected instrument territory.

Access to the fortress

There is greater restriction of access to the instrument trolley than to any other part of the sterile field. It is a 'no-go' area for everyone except the scrub nurse. The ability of the scrub nurses to anticipate what is needed and act quickly on that assessment, to account for their instruments and to minimise the risk of contamination means that anyone encroaching upon this territory will be most unwelcome. There are very few exceptions. The very posture of the scrub nurses as they stand, hands resting possessively on their trolleys as they gaze intently into the operation site suggests protective ownership.

Only the consultant surgeon and learner nurses will be admitted to this territory and the circumstances of their admission differ dramatically. Of these two groups, the learner nurses will have better chance of accessing the trolley than the surgeons:

Occasionally I would tolerate the surgeon helping himself if I'm busy, or if I'm assisting of course then I have things where he can reach them anyway. Um, or if two procedures are happening to the one particular patient then the other person has to help themselves because you can only be one person, you can't be two people. But generally I don't tolerate the surgeons, registrars or otherwise taking things off. It's my responsibility to know where each of those instruments are. It [other people taking instruments] does make it difficult. It gets messy and you lose track of things ... I would see other nurses taking instruments as the same thing. I think it should only be the one. Unless you've double scrubbed

135

with someone you're teaching, that's a different matter again. (Anne 458-481)

Anne provides a clear explanation of why she limits access to the trolley. In most instances the surgeons rely on the nurses to anticipate their needs and provide instruments and equipment to them. This promotes a smooth flowing operation. A surgeon is more likely to take instruments directly from the trolley if the nurse is inexperienced and slower than the surgeon desires. Occasionally a surgeon may be so entrenched in the habit of taking instruments directly of the trolley. Neither situation is welcomed by the scrub nurse but will be tolerated:

> The surgeon takes instruments and equipment from the scrub but does not return them to her. He places them on the other side of him and she has to move around him to retrieve them with monotonous regularity. Her face suggests that she has switched off in order to tolerate this. When he tosses items back onto her trolley of instruments, knocking them out of order, she calmly and steadfastly rearranges them. (FN 865-872)

Notwithstanding the tolerance the surgeons may receive, other less qualified medical staff are not permitted access and should they make the mistake of moving into the territory they will probably be rapidly corrected. The explanation for this exclusion appears to have a hierarchical element as well as an accounting rationale. This was demonstrated in the first layer when the RN denied access to a registrar stating '... when you're a consultant you can too'. While that registrar was denied access, the following field note shows a registrar gaining 'unapproved' access to the trolley and the effect it has on the rhythm of the operation:

> During the operation, if the scrub is a little slow getting an instrument, the doctor assisting the surgeon takes it off her trolley. This irritates the scrub and she misses a beat in her rhythm each time it happens. (FN 860-864)

Although the surgeons are not welcome to have access to the trolley, the 'learner' nurses are in a different category. They must have access to the trolley to learn the instruments and the role of the scrub nurse so that they can take up their responsibilities in that role. Their presence is tolerated and often welcomed but they, unlike the surgeon in the previous field note, are meticulous about replacing the instruments:

The inexperienced nurse makes eye contact with the scrub nurse and asks her if she can go through her instruments. The scrub nods and waves her hand over the trolley in a manner that suggests, '... what is mine is yours'. The learner begins to pick up each type of instrument in turn and look at them and fiddle with them discovering how they are used. If she is unsure of anything she asks the scrub nurse who will turn briefly from the operation and answer her questions in a friendly and easily comprehended manner. She replaces each instrument exactly where she has picked it up from and at no time is holding an instrument that the scrub requires (FN 4797-4810).

Controlling the instrument territory facilitates the efficiency of the operation. People visiting the ORS must learn the cultural rules that accompany this territory. As they are tacit rules, it is often through their mistakes that neophytes are confronted with them. The following example demonstrates the difficulties and nursing reaction that can occur if a person who is new to the ORS culture transgresses the rules governing the instruments:

The resident is troubling the scrub again. She needs to concentrate deeply because she is coordinating many instruments to three doctors and having to ask the scout for more items and count them on. She may receive an item at the same time as one of the doctors hands her one back and another asks her for something else. She manages it all but must work fast and her face is intent. She glances at the resident who is persisting in turning his back on the tray and reminds him again in a firm voice. He is less interested this time and as the time passes he begins to gaze around him. The surgeon has an instrument that requires cleaning before it can be used again and he hands it down to the scrub. The resident intercepts the instrument and begins to turn it over in his hands opening and shutting it slowly. He stares at it apparently fascinated. The scrub stares at him and has her hand out for the instrument but he doesn't hand it back. The scrub moves her hand forward slightly and still he keeps gazing at the instrument slowly opening and shutting it. Her eyes are boring into his head and she is absolutely motionless. The silence in the room is profound and the operation has come to a standstill. Everyone is aware of it except the resident who opens and closes the instrument again. The scrub nurse reaches across the table and patient and closes her hand firmly over the instrument wresting it from the resident. He looks up at her in surprise. She keeps eye contact with him as she wipes it over deliberately and sets it firmly in place on her tray. He is now acutely aware that he has done something wrong and looks sheepish. The operation continues. (FN 3696-3730)

The importance of understanding the rules associated with conduct in the operating room is clear in the previous field note and learning them can be considered to be a rite of passage into the ORS. Similarly demonstrating familiarity and competence with the instruments is a rite of passage for nurses who are new to the ORS.

The instruments: a rite of passage

The surgical instruments are a significant set of artefacts for beginner OR nurses who must know the instruments and be able to work with them in order to pass another, more advanced, rite of passage 'flying solo' (Winnie 364)[28]. The range of instruments can make this a daunting task. At first glance it appears to be an overwhelming challenge and those who have accomplished it are viewed with a degree of awe:

> A hundred instruments sitting in front of you and how awesome that looks! When you go to a theatre and you see seven trolley loads of instruments and see the scrub nurse just standing there as if, you know she's at a picnic without a concern about all these instruments you think 'how on earth can she ever learn those?' (Winnie 220-233)

This field note also illustrates how proficiency with the instruments is a measure of the regard in which a nurse is held. In this respect the instruments are a visible manifestation of the nurses' knowledge, knowledge that is highly respected. Winnie however believes that learning the instruments is not as difficult as it appears saying:

> '... in actual fact they're not that difficult. You know they're actually kind of all worked in different kinds of instruments and if you understand those blocks then, you know some of the orientation that I do first is about that you know kind of making it less scary and saying half the surgeons don't know what they're called anyway, don't worry about it! (Winnie 233-240)

She likens learning the instruments to a trick or a 'head game' (Winnie 222):

> ... it's getting your mind around that kind of thing like a great big trolley of instruments and how do I manage it, and it's surprising how quickly they find they become good at it. And you know the first couple of times they'll be holding the instruments upside down and putting them in the wrong hand and dropping the needles and things but that's about confidence ... (Winnie 245-253)

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[28] Discussed in the 5th Layer.

Penny however believes that there are no tricks that help beginners to learn the instruments. She says:

> ... as far as when you're starting learning the names of the different artery forceps and that, there's no easy way, no easy way. It's a bit like, how did you learn to spell. You sat down and you learnt it. And that's the only way you can do it. (Penny 528-534)

Learning the instruments is not just the province of the beginners. The more experienced nurses find that keeping up with new instrumentation is a continuous challenge. Jill notes:

> The technology changes like the instruments change from year to year, so you might think you're on top of it and then turn you back and you've got a know a completely new set of instruments or they've got three new sets of instruments and a new surgeon and they do it differently and so you have to keep, it's an ongoing thing, more so than I think, on the wards. (Jill 147-155).

The advances in instrumentation appear to excite and challenge the nurses, contributing to their work satisfaction. The pride and sense of achievement that many of the nurses experience through mastering the instruments indicates that they are a powerful symbol of the 'worthiness' of a nurse in this technical world. This is evident with beginner nurses who are attempting to 'fly solo' and in the experienced nurses who seek out and relish the challenges of complex, cutting edge surgery and the technology that accompanies it. However the continuous demands that they place on the nurses in terms of care, accounting, preparation and ongoing learning have contributed to the stereotype of the OR nurse as a technical rather than caring nurse. The next layer considers this argument seeking to illuminate the relationship between two important demands in the OR nurses day-to-day work life. These are demonstrating technological skill and the ability to provide humane care for patients.

Closure of the 3rd Layer

Cultural artifacts are those objects that people within a culture use to conduct actions and activities within the culturally determined parameters of time and space. Discovering the symbolic importance of key artifacts for members of a culture enriches the interpretation of that culture. The theatre wear and the surgical instruments are artefacts that hold cultural significance for the nurses in the ORS.

Theatre wear is the key artefact in the first rite-of-passage that nurses who are new to theatre must pass before they can gain entry into the ORS. In this rite-of-passage the nurses must move through a process of discovery and transformation that will prepare them for entry into the department. It is a superficial transformation, for although these nurses will look like they belong to the ORS they have gained very tenuous access to the area and have much to learn.

Amongst the lessons that they must learn are the tacitly understood rules and rituals associated with theatre wear must be learnt. These include the functional and social purposes of activities relating to theatre attire, communicating and learning to recognise associated cues.

The second set of artefacts that the nurses must confront is the surgical instruments. They are a set of artefacts that exists within the most tightly guarded sterile territory. The nurses view them protectively and with a sense of pride and ownership. A nurse's proficiency with the instruments is closely linked to the regard in which the nurse is held. For example new nurses will be judged on their ability to pass the second rite-of-passage 'flying solo' as a scrub nurse. More experienced nurses strive to keep up-to-date with the rapid changes in instrumentation and take the opportunity to challenge themselves with complex and/or new surgical procedures. The increasing rate of change in instrumentation and the related demands upon the nurses have contributed to the argument that operating room nurses are technical rather than 'caring' nurses. This argument is the focus of the next layer.

The 4th Layer: Operating Room Nurses and Patients

Opening story

There's blood everywhere, on the floor, on the equipment, the linen, the staff. Piles of blood soaked abdo packs[29] and raytec[30] are awaiting collection. A plastic bag full of empty blood packs slumps forgotten on the anaesthetist's chair, two of the four suction bottles are full and a third is half way there. The scout donning her gloves, her eyes ranging around the room, whistles under her breath, 'lost a bit of blood!' The patient is obscured by the milling staff. He's in a bad way and needs to be moved through to the Intensive Care Unit. Moving him is a meticulous and painstaking procedure. Multiple drains, arterial and peripheral lines, PCA[31], IDC[32] and ventilating equipment are carefully juggled during the transfer. The nurses, technician, registrar and anaesthetist work together, washing the patient gently, moving and testing the tension on lines, checking for air bubbles, tucking him in every time the blankets are disturbed, removing the bair hugger[33] and calf stimulators. 'Is this disposable?' The anaesthetic nurse holds up a disembowelled temperature probe. The scout glances up from her work and both she and the anaesthetist say, 'yes it is' and return immediately to the task in hand. The anaesthetic nurse is relieved 'oh that's good because I just ripped all the wires out of it' she tosses it over the patient and into the bin. 'Can we have that pump please?' The anaesthetist indicates the IMed[34] which the anaesthetic nurse passes across him to the technician who puts it on to the already crowded IV pole. 'Well, I could if there was room' he says but no-ones listening. The anaesthetic nurse points out the tension in the line from the pump and she and the anaesthetist work together quickly and carefully to release it without dislodging it from the patient. ICU equipment steadily replaces OR equipment. The pulse oximeter from the ICU monitor is attached to the patient's hand but the reading is poor and his fingers have had the OR pulse oximeter attached for a long time. The scout tries his

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[29] A large piece of wadded gauze often used in the abdominal cavity to collect fluid and hold organs in place.

[30] A piece of gauze that has a radio-opaque strip implanted into it.

[31] Patient controlled analgesia.

[32] Indwelling catheter used for continual drainage of urine.

[33] A device that warms patients during an operation.

[34] A machine used to pump intravenous fluid.

feet and gets a poor reading again. She moves it to his opposite hand and gets a good reading. The nurses and anaesthetist all pause in their tasks and check that the ICU monitor is working properly. The scout is attempting unsuccessfully to zero it. Another nurse bustles in through the internal door and looks around slowly taking everything in 'What a mess you've made!' The scout turns to her and says 'yeah, it wasn't us, it was him' pointing at the registrar who ducks his head, grins sheepishly and shrugs. The other nurse snaps on gloves to help with the cleaning up. The scout says 'Kay, you're the anaesthetics queen, come here and show me how to do this' but Kay doesn't hear her and the scout zeros the monitor successfully anyway. 'Yessss!' everyone's relieved and now satisfied that it's working they return again to their activities. The scout covers the patient's toes with the blanket and gives them a quick squeeze. She rearranges the oxygen tubing and checks the O_2 flow then, looking at the amount of work still left to do she turns off the O_2 from the transportable bottle and says to the technician, 'we mustn't forget that's turned off'. It is organised chaos, and moving slowly and with monumental dignity around its outskirts is a turbaned nurse. Holding aloft the patient's set of false teeth in a plastic container, her face serene amidst the drama, she is intent on making sure these teeth do not get separated from the patient.

Introduction to the first cardinal relationship

The relationship between the nurses and the patients is one of the cardinal relationships existing in the operating room. The central purpose of the relationship is to ensure the 'safe passage' of the patients during the time they remain in the ORS (Giordano 1997 p.314). Patient safety is a fundamental issue for all staff in the department. Much of the nursing that takes place is focused on making sure that the patient is safe:

> The thing is that everything, virtually everything we do is risk minimalisation focus whether it's infection control process, whether it's preventing damage or neurovascular damage or you know, all sorts of things. Risk management, risk management, it should be, it's basically a flashing light in front of our eyes all the time. (Barry 223-230)

It was argued in the first layer that the nurses had responsibility for the theatre and the safety of the patient and staff. They adhere rigidly to rules because rules work to maintain a safe environment. A safe and predictable environment provides the

142

freedom to take the necessary risks required for a successful surgical outcome as Barry explains:

> The surgeon, no matter what they say about the responsibility of the surgeon, the surgeon is highly reliant on us to get it right. He shouldn't have to worry about it. He should be able to just get on with the operation and us to give him advice is when 'you've got so and so' and then pull it all out. He shouldn't have to distract himself. He should be focussing entirely on the operation and if he's got good people about him he shouldn't have to concern himself with any of that. (Barry 626-637)

Supporting the surgeon is only one of the strategies the nurses employ to minimise physical and emotional risk to the patient. Other strategies include:

- balancing the technological and caring elements of their nursing care;
- working with limited patient contact;
- advocacy;
- rigid adherence to rules, standards and procedure (for example the rules governing; asepsis; ACORN standards of perioperative practice; the 'count' procedure);
- coordination of the operating department as a whole;
- coordination of each operating theatre, and
- maintenance of team peace.

An exploration of the first three strategies is included in this layer. The remaining strategies are explored within the 1st, 2nd, 5th and 6th Layers.

Entry into the technological space of the operating room, for many patients, is accompanied by feelings of fear and anxiety (Garbee & Gentry 2001 and Norred 2000). Physically and emotionally vulnerable, the patients rely heavily on the nurses' ability to compliment the technical components of their role with the caring aspects (McNamara 1995; Parsons, Kee & Gray 1993 and Vance & Davidhizar 1992). The literature related to both technology and caring is extensive and complex. Technology is described as an interrelationship between such things as equipment, science, culture and values which is efficiency driven (Barnard 1999). It can also be understood in terms of knowledge, skills and technique. Sandelowski (1999) argues that technology in the form of objects and 'ways of doing' is implicit within the

ways nursing is shaped and understood. Similarly caring is linked with nursing to such an extent as to be almost synonymous. It is a nebulous concept that, while capturing the artistic and human nature of nursing has proved to be difficult when used as the defining characteristic of nursing. Stein-Parbury notes that the most current understanding of caring is as an '... emotive, intimate, interpersonal relationship' which values the individuality of each patient (Stein-Parbury 2000 p.25).

Caring and technology

In combining the technological and caring aspects of their practice, nurses act to provide the soft, human approach that makes medical technology acceptable to patients. Through this human conduit the physical link between the patient and machine can be made. Through a process of negotiation, education and ongoing support of the patient the nurse is the '... software which allows the hardware to function' (Sandelowski 1999 p.201). This observation is pertinent to the ORS where the technological imperative that dominates the operating room appears to function best in association with a sympathetic human approach (Surkitt-Parr 1997). Separating the technological from the caring aspects of nursing in the operating room artificially untangles what are sophisticated, closely interwoven activities occurring within the everyday working lives of OR nurses. Barnard & Sandelowski (2001) concur with this, considering that technology is explicitly employed by nurses in order to provide humane care. The following story drawn from the field illustrates the effortless interweaving of the technological and caring aspects of nursing. The interplay between team members and the instances of clinical decision making which are also evident in the story are explored in the 6th Layer:

> The patient is wheeled in and the anaesthetic nurse comes over to her making eye contact and touching her on the shoulder. The patient is very nervous and states that she is feeling tense. The nurse reassures her saying she'll be looked after when she's 'in there'. She looks at the woman's hands and notes that she has nail varnish on all but one finger. Her expression tightens and the patient jumps in with 'the doctor said it would be okay to do this'. She gazes appealingly at the nurse who says, 'well, he might think its alright but I need to know that you're safe and the monitor might need to be on any of your fingers. It won't work through nail polish. We'll have to take it off. Are you wearing lipstick?' She

144

peers at the patient's mouth. The patient looks more worried and says, 'yes, but only a little bit'. The nurse teases her gently about wearing lipstick to theatre and in so doing minimises the problem. She does explain that she needs to see the woman's lip colour and proceeds to take the varnish and lipstick off. She chats with the woman and elicits the information needed in a way that is more suggestive of a conversation than a disinterested checklist. It transpires that the woman has had coffee 2 hours previously. There is a pregnant pause, 'but it was only this much' she puts her thumb and forefinger about 5cm apart. 'Well I'll have to talk with the doctor about that' says the nurse rubbing the woman's leg reassuringly 'did it have milk in it?' The patient flicks a hopeful glance over to her and her face brightens 'no, no it was black'. 'Oh that's good, but I'll still let the doctor know. It shouldn't be a problem' the nurse shakes her head and smiles at the patient. 'Yes and it was only a tiny bit' the patient indicates again and the gap between thumb and forefinger is now 3cm. The nurse places the ECG dots on the patient telling her that they will be a bit cold at first... The anaesthetist burls in through the doors and captures control of the conversation immediately. He exchanges pleasantries with the patient and turns to the RN to start to say something. She gets in first and her tone is half serious, half teasing, 'Did you tell Mrs Renick that she only needed one nail cleaned?' 'Yes. It's fine, you only need one'. 'I don't agree, what if the connections poor, then where do I go? I'm sorry but this is my decision. It's safer.' The anaesthetist frowns at her and she looks steadily back at him and informs him of the coffee that has been drunk. 'It was only this much' says the patient now indicating 2cm. 'Yes, and it was black and she had it at 6' the nurse adds quickly nodding at the patient and looking back at the anaesthetist. 'Well, no, well that's okay then'. The anaesthetist and the nurse grin collusively at each other. (FN 1511-1576)

This field note illustrates the combination of technological and caring nursing activities. The cultural definitions of both technology and caring that exist in the ORS suggest that the nurses understand technology as the knowledge and skills to work proficiently with instruments, equipment and machinery as Lee indicates:

> I guess because what we do is considered more technical, you know, instruments and how they work and how we clean them and how we set our trolleys up and all that sort of thing, but we still definitely are caring people ... our technical stuff is caring for the patient's outcome anyway, you know, checking that everything is sterile and working in that the patient's not going to be asleep for longer than they need to be and that sort of thing. So although that's not direct care it is still indirect and it is still the patient and I guess some people would observe us as forgetting the patient, but

mainly because we had more indirect care than ward nurses. (Lee 627-657)

Caring is understood in terms of physical and emotional comfort and support. Asked how the nurses demonstrate 'caring', the care of the person's body and the emotional care of the patient are emphasised. The former can be linked back to the territorial space of the patient discusses in the first overlay. The holistic nature of nursing practice is exemplified in this aspect of OR nursing, an aspect which coexists with the 'patient as two territories' model discussed in the 1st Layer, albeit uneasily. It is this level of patient focused care that the nurses believe lends weight to the presence of nurses in the theatre environment as Winnie explains:

> I think that nurses come through a whole range of experiences before they come to theatre that's what makes them nurses ... Nurses are educated on a whole range of things that aren't an integral part of technicians and what that does is that it gives nurses real opportunity to see things differently to be a part of the a professional nursing whatever, that you can you know involve yourself with what happens to the patient before they come, you're exposed to reading their admission sheet, use communication skills, you know a whole range of things which I don't see as the technical ... We as nurses have seen the whole spectrum of the patient, yeah having to know the difficulties, mothers having to leave babies behind to have procedures, getting involved with social welfare agencies. You know the surgeon's assistant is trained to look after the surgeon while the nurses have a patient focus. A whole range of things. We just recently had an anaesthetic technician's course [copy of the curriculum document] here while we're working on an anaesthetic course, they're very different. The technician's course is in and around service to the anaesthetist and it was a whole different head set to nursing that was looked at service to the patient and so it was whole shift between looking at one document and the other you know that one was centred around the anaesthetist and service to them and you know the handmaiden sort of stuff. (Winnie 453-503)

Winnie's allusion to the 'handmaiden' stereotype is a subtle rejection of an image that has haunted OR nurses. She uses the caring aspect of nursing to distance OR nurses from the stereotype. Caring for patients includes what Lee describes as 'simple' things like maintaining dignity by adjusting the patient's gown and providing a clean pillow. Washing faces and operation sites, covering patients with blankets, conversing and comforting are other caring acts (FN 3900-3907; 4037-

4030). Lee remembers, '... we had a lady who had a cancer removed from her scalp and she had long hair and it was all bloody. Well, we actually washed her hair for her in theatre' (Lee 611-617).

The necessity of combining technological proficiency and caring in the operating room is taken for granted by the nurses. This in itself is not unique to the OR. Barnard (2000) notes that technology is everywhere that nurses practice and is part of their tacit understanding of their work. As a cultural commonplace, this belief underpins the way in which nurses perceive both themselves and their practices in the ORS. Winnie discusses this issue:

> ... often theatre nurses are labelled like 'you're not a people nurse, you're not a people person that's why you like theatre' and the nurses say they're not right we have quite intense contact with people it's just very short and that's very true and you're also, even though our patients are asleep, they are still being cared for as if they are already awake and communicating. You care about patients, they're the most important factor in what you're doing...you can't be in the world where people are having a personal crisis as coming into an operating theatre I mean it must be the most you know tense time in people's lives almost if they could say that and a lot of our patient' are awake throughout their surgery. I think that you have to marry them [technical and caring nursing] ... I don't think anyone can work if you don't marry the two. (Winnie 404-444)

Despite Winnie's statement and the argument it supports the tension between caring and technical nursing manifests itself in the everyday activities of the nurses. They recognise that the level of technology in their workplace has the potential to distance them from the patients, erode the quality of care the patients receive and undermine their physical wellbeing. Some of the nurses actively incorporate a caring approach to their practices to counteract this distancing and its consequences:

> ... there was this woman came in the other day, who came from way up the country, had a breast abscess and she was extremely distressed when she arrived and I didn't actually say anything, I was just looking at her and I started talking to her and I started talking about where she came from and telling her what I was doing now and just going through it all quietly and gently and being sensitive to where she was, you know this is not big-noting I'm just saying this is, and by the time we got to induce the anaesthetic she was fine, which meant that she didn't have giant

147

surges of catecholamine going around her body and all sorts of physiological problems that if we'd left her and said you know, 'too bad cock we've gotta get on with this.' (Barry 943-960)

The emphasis on equipment and technology in the ORS demands that nurses make a special effort to recognise the primary importance of the patient. The experience of the nurses is reflected in the work of Barnard & Gerber (1999) who note that some nurses found technology to be a barrier between the nurse and the patient, the alarms drawing attention to the machine rather than to the person. Barry is acutely aware of this and uses his insight to act:

> I always say to new people in recovery and so forth, 'forget the monitors and take a good long look at the patient' you know 'the monitors have got alarms on them, they'll tell us if they're not happy'. (Barry 1229-1234)

While believing that their role encompasses the caring side of nursing, the nurses' acknowledgement that certain areas on the department may suit nurses with a technological rather than a human focus and vice versa. This means that while the nurses in the ORS are multi-skilled, acting as scrub, scout, recovery room and anaesthetic nurses, many of them have a preferred area in which to work. Penny acknowledges this readily:

> Yes! Of course you can [be both technical and caring], but you'd certainly have a leaning toward one or the other. The more caring nurses probably do more for the anaesthetic and recovery side of things, the more technical people prefer the scrubbing and scouting and. Yes. Yes. Not that I'm saying for a moment that the other people don't do anything. (Penny 56-64)

These comments also illustrate the central nature of 'action' in the theatre nurses' work. The dominant goal of theatre is to conduct a successful operation for the treatment of disease or injury. As a consequence of this a scientific philosophy prevails in the theatre in the form of the medical model (Watson 1994). Penny's statement that the more technical people are '… actually getting in there and doing something' is not casting aspersions on the nurses who prefer the anaesthetic and recovery room side of things. It is echoing the technological imperative of the operating room. Barry and Winnies' comments, while supporting the combination of technological and caring activities, reflect Penny's comment:

148

... we tend to be very patient focused you know ... this is sort of another one of these heresies ... that theatre nurses aren't, they're only concentrated on the technical aspect and they're not patient focused and there's not real patient care and ... you don't really have anything to do with the patients. This is bullshit, the theatre nurses actually take a very great interest in the patients and what's going on with them, especially before and in recovery and there's some people, a number of people who are just amazing in recovery like that ... theatre nurses are often badly represented as to how sensitive to the, for example people come into the theatre to be booked in, you know we don't go on with a lot of bullshit but we can tell whether they're really frightened but they're not saying so, and we usually can tell when they're wetting themselves. But then, but we're just doing it because we're very good at taking a long look at the patient ... once you've got the patient asleep and settled and safe, because you know how we always, you can go to a great deal of trouble to get the limbs arranged absolutely just so ... then we get to the point where we can get on with the technical bit, the guts of the matter if you want to, so to speak. (Barry 170-214)

While both Penny and Barry draw a comparison between the anaesthetic/recovery nurses and the scrub/scout nurses, Winnie's comparison is between theatre and ward nurses. She finds the short but intense engagement with patients rewarding but argues that it is the technological side of theatre that is appealing to most nurses who work there:

A lot of nurses who are round saying they do get terribly involved in the patients and it very intense and that's true. But underneath it all (and I'd probably get crucified for saying it probably) but I do think that often theatre nurses are not as people orientated and I do believe that they know it and I wouldn't say this in front of everybody but they are perhaps more technically minded and that's certainly the case for me. I think nursing as in nursing on the ward is not for me. Whereas I can be quite supportive to people in the short term you know. (Winnie 414-426)

Indeed the rapidly changing technology presents the nurses with ongoing challenges that many of the nurses find exciting and rewarding. As Jill says 'throw me a challenge and I'll see if I can cope' (Jill 94-95). They must continually adapt their knowledge and skills to the new equipment and adjust to the changing values and expectations that accompany the equipment and associated advances in surgical ability and outcome. Meeting the challenges and successfully mastering the new technology is rewarded with respect, a gain in confidence and associated

development of their professional abilities. The value placed on technical competence, in terms of confidence, respect, and professional development, is also noted in the literature (Surkitt-Parr 1997 and Barnard & Gerber 1999). Nurses with technical proficiency are actively recognised within the ORS, are trusted and consulted. The cultural term employed to describe these people is linked to the technology mastered as Jill's comment illustrates:

> It's like some people are the percutaneous queen or the hip replacement queen, that type of thing, usually you've been doing them over and over or you have done so many, so often, you've got the hang of it. People say, 'Well, you know, you can do it now. You've done 50 of them, you shouldn't have any problems, you shouldn't make a mistake, you should be able to teach everybody, and know all the ins and outs of that, that angle'. (Jill 128-137)

Her explanation was borne out in the field notes in which a scout says 'Kay, you're the anaesthetics queen come here and show me how to do this' (FN 5066-5068).

The nurses are adept at combining the caring and technological aspects of their role especially when activities have a dual rationale, that is, they have a physiological and emotional basis. For example using warm blankets over a patient is at once a comforting act and a way to prevent inadvertent intraoperative hypothermia (FN 338-339; FN 449-450) The following field note illustrates the same link using calf stimulators[35]:

> The patient, anaesthetic nurse and anaesthetist enter the operating room, they are all laughing. She [the patient] has told them that she wishes to keep the [bits being removed] because they can be used as an aphrodisiac. The scout and theatre technician join the conversation and all, including the patient, discuss the possibilities. The patient is nervous and her eyes roam around but she joins in the laughing. The anaesthetic nurse touches her head and tells her that she is about to put on the ECG dots, which are cold, and the BP cuff. The scout and technician put the calf stimulators on and the scout explains to the patient what they are for. She asks the patient if it feels nice, the patient says 'yes!' and laughs 'very nice!' She asks if there are any for her feet. The anaesthetic nurse and anaesthetist smile and then call her attention back so that the anaesthetic can be administered. (FN 667-682)

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[35] A pressure devise wrapped around the patient's calves and reduce the risk of deep vein thrombosis.

150

Sometimes the conflicting demands of this balancing act can interfere with the smooth conduct of the nurses' activities, in this case a minor hiccup that provides opportunity for more patient contact:

> The anaesthetic nurse has tucked the patient in to keep him warm and laughs 'Well now I've done that I'll need to take your arm out so I can put this on. She untucks him and puts the pulse oximeter on his finger, returning his hand under the blanket. (FN 2566-2571)

In the next example the patient is having a cannula inserted for spinal anaesthesia. The nurse is caught between ensuring the patient's physical well being by keeping her still and quiet, and providing emotional support when the patient shares intimate information with her:

> The patient is telling the nurse about the accident that brought her into hospital. The anaesthetic nurse nods quietly and lets her talk but does not ask any questions, listening with one hand steadying the patient. It transpires that the patient's young relative was also involved but the patient hesitates and does not indicate what the outcome for the relative was. The nurse takes a deep breath in and looks very uncomfortable. The needle for the spinal is just being inserted and things are tricky. There is a pregnant silence and then the patient says 'there wasn't a mark on him, he was fine' and the nurse lets her breath out in a rush and says 'oh that's good, really good' in a relieved tone of voice and ducks her head down to smile at the patient. (FN 4701-4715)

This type of exchange is experienced by most of the nurses in the ORS as they act in the scrub, scout, anaesthetic and recovery room roles. In the multi-skilled environment the nurses are in an excellent position to make comparisons between the roles and the amount of patient contact each will entail. It would appear that the scrub and scout roles are linked to limited patient contact in terms of the caring aspects of the nursing role. Barry explains:

> ... it's possible to do a whole list, if you were scrub and scout it's quite possible to do a whole list and do little more than see the patient's face. Because the way they like to turn things over, you know, you go and wash your hands and come in and you start setting up, and they bring the patient and you look round to see the patient and you check the consent form and you accept that that patient is that, the scrub and scout nurses check that that patient is the person who's consented to that and you're so mindful of setting up and getting to have the count done ready to start the operation that you take little notice of the patient at all. And, you go through

a whole list and, and you have, virtually nothing to do with the patients. (Barry 1122-1138)

Anne agrees with Barry illustration, stating:

> Well usually they're (the scrub nurses) busy setting up their own things, sometimes I'll be able to say hello to the patients as they come through, but you never really get a chance to because you're so busy doing your thing you can't be doing everything and you can't be everything in the theatre, it tends to be a rather you do your own thing or not. The anaesthetic RN is the one who would mainly talk or the scout maybe, but very rarely the scrub nurse. (Anne 391-400)

This lack of contact with the patient can result in the scrub and scout nurses not ever knowing the patient's name. Their reference point appears to be chosen for organisational purposes and therefore the type of operation the patients are having is of more use to them than knowledge about the patients themselves as the following field note suggests:

> 'What do you reckon his name is? Reginald or Reg?' The scout nurse is looking down at the patient who, still intubated is taking a very long time to come out of anaesthetic. She reads the tattoo on his arm 'Reg. It is Australia after all. I can't imagine *he'd* be called Reginald. She begins to call the patient by the shortened form of his name and asks him to open his eyes. The patient sleeps peacefully on. (FN 4396-4404)

A further permutation of the lack of patient contact, albeit one that involves all staff and is done for best of reasons (teaching and learning), is the transformation of a patient from an individual, to an observable object. Once the operation has commenced the patient, or at least their operation site becomes, temporarily, an object of interest, with staff and students often viewing the procedures. This situation does not seem to be affected by the type of anaesthetic that the patient has had, and conscious patients are just as likely to be observed as anaesthetised ones. The voyeuristic origins of theatre[36] may contribute to the casual acceptance of the patient and operation as objects to be dispassionately observed. The objectification of the patient extends into an uncomfortable surrealism when it is accompanied by the intimacy of sympathy. This has the effect of re-establishing the patient as a person

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[36] Discussed in the Literature Review.

and highlighting their absolute vulnerability at a time that this would not usually take place in the operating room. In an observation made during an operation an RN [not involved in this operation] enters the theatre, peers intensely at the perineal operation site, sighs, shakes her head says 'poor lady' and leaves (FN 591-593).

The effect that this had on the staff was unsettling, as objectivity appears to be crucial for the conduct of an operation. Occasionally, however, the patient will present with something out of the ordinary and will as a result become better known by the nurses. The issues that capture the nurses' attention tend to be those that present safety risks to the patient and therefore impact upon the nursing activities in the theatre. Under these circumstances information about the patient will be actively sought and shared by the nurses:

> 'My God, have you seen the list of things she's allergic to?' the nurses gather around the anaesthetic nurse who is standing at the head of the empty theatre table. They murmur in disbelief at the substantial list of allergies which the patient has had typed onto an A4 page and laminated so that she does not have to list them each time. (FN 1072 - 1079)

At times the whole theatre team will become involved in the discussion surrounding the patient as a person rather than in terms for the type of operation occurring. Again it is something unusual about the patient that will trigger the recognition of them as a person:

> The surgeon makes a comment to the effect that it won't matter how good the job is today the patient will make sure that healing can't happen because the patient's lifestyle is one of high risk. His tone is exasperated and sad. The scout picks up the notes and flicks through them. She comments on the age of the patient which is very young and on the patient's social history which includes trouble with the police, drugs and a history of drinking and smoking heavily. The scrub, scout and surgeon all discuss the problems of teenagers, drawing on their own experience with their own children. (FN 5440-5451)

It is likely that the nurses and other staff are attracted to these types of patients because they are at higher risk than usual. One group of patients presenting a consistent safety risk, and whom the nurses therefore actively identify, are the *crumbles*.

The 'crumble'

A crumble denotes a patient who is high risk, who has multiple systems failure and who will require a great deal of external support to get them through the operation successfully. Rose defines a crumble:

> Basically [a crumble is] a patient that's not up to optimum health, you know, they tend to be old, they might have multi-system failure, bad respiratory-wise, cardiac-wise, vascular, you tend to talk more about respiratory, cardiac and vascular crumbles because they're really, they're not well patients but they've got to have the operation so they need a lot more pre surgical preparation from the anaesthetic department, more than likely they'll need an arterial line, they might need central lines, they might need, they might even need a Swann Ganz occasionally, or you might want to do them under a regional anaesthesia, so you might need, say if you need to do something under an arm block because they're really not the great health specimen, you might need 45 minutes from actually doing the block until the block's effective enough for you to do the surgery. (Rose 765-782)

Barry agrees with this description of a crumble adding:

> Ah yeah, these days it's not uncommon to have young crumbles, you know like for example quite often you get people who are, are, they might come in for a gallbladder but they're really overweight and they smoke like a chimney and their blood pressure's terrible compared with what it should be for their age and those people are a real nightmare in recovery and a real challenge. (Barry 670-678)

Although harsh, the term crumble is not used in an unkind manner. It is cultural shorthand that represents a vast amount of information about the patient and how to plan the care for them. As a consequence of their physical fragility these patients require a great deal of preparation time dedicated to them prior to the operation. Therein lies part of the significance of the crumble. In the planning of the department's activities and those of the specific theatre a 'crumble' can impact on the timing and completion of the list, on tea breaks, on availability of instruments. They are more likely to have complications and are more complex to recover as Barry notes:

> [The] significance of the crumble is that you're going to have to do all sorts of things to get them to the point where you can actually operate and it's also liable to be very tricky in recovery as well, to make sure that they don't fall in recovery as well. So you know, it starts from the minute you're getting ready to start the anaesthetic,

154

you know putting lines in and so forth. Getting them to some point where they can be operated on safely, where they actually start the operation and then getting them to wake up and recovered enough to get them out of the place ... It [the fact that they're a crumble] features fairly strong in the scheme of things because of the complexity of the preparations you might have to make. Um, and if you know that somebody's a crumble we'll probably get them up early[37] so that we can then have adequate time to really do it properly and minimise the changeover time[38]. (Barry 683-710)

In view of this, communication about the state of a patient who is a crumble is essential to the time management of the theatre. Communication tends to be between the anaesthetist and the nurses. It is usually shared verbally although the information about the patient may be displayed on a white board in the holding bay (waiting room). The surgeon is not necessarily included in the communication loop and as a consequence may be unaware of the anaesthetic status of the patient:

Well usually the anaesthetist will have told you beforehand, 'oh this is a real crumble'. So you know that, it might go fine, but then it depends they might have crummy veins to start with and you can't get a drip in. You might need to put in a spinal and they've got a really osteoporotic back and you can't get the needle in and all that extra time that the surgeons think, 'oh, taking half an hour to put spinal in, why is that?' But they haven't bothered to come up and find out 'oh is everything right?' 'Oh no, we've got a really hard back and we can't get anything in, but I don't want to do him under a general because his respiratory status is so poor that he's not going breath afterwards', so. (Rose 786-799)

The crumble is an important type of patient for the nurses and so too is the patient who is exhibiting a higher than expected level of anxiety.

Beyond 'normal terror'
The nurses will also engage more closely with the patient if the patient appears more vulnerable than 'normal'. It has already been argued that many patients are anxious and fearful before an operation. This is considered normal in the theatre department (Glaze 1999a) and is expected:

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[37] They will transfer the patient from the ward to the theatre department.

[38] A discussion of change-over time is presented in the second overlay.

The first patient is wheeled into theatre and looks terrified. Her eyes are wide and roam the theatre. The scrub nurse says 'Yeah, they're always terrified.' She watches the patient ... but stays with her trolley. (FN 538-543)

While the nurses acknowledge that coming to theatre is potentially frightening for any patient they try and normalise the experience. Introductions, explanations, reassurances and light conversations are all employed by the nurses as ways of calming and relaxing patients in what, for them, is an alien environment. Lee reflects on this:

I mean, I think we get patients at their worst, not being critical, but you know many of them are terrified, no idea of what is going to happen to them. Some of them are having operations that will decide their fate, I guess, and that is a really, really awful experience for some patients and although we don't sit there and hold their hand while everyone else is bustling around, although that's the case sometimes, we do the most we can to alleviate their fear and you know give them encouragement and you know hold their hand while they go to sleep and that sort of thing. (Lee 631-643)

Occasionally the nurses find the patients' anxiety frustrating, their own level of comfort in the area conflicting with patients' preconceptions of what the ORS might be like. Barry considers the media can be linked to the more far-fetched preconceptions:

... the thing is that a lot of patients have been too conditioned by television programs too and they think it's all going to be a big drama and you sometimes literally say to them 'look it's a bloody sight more boring than on television'. (Barry 967-973)

The nurses appear to have developed the ability to discern when a patient's anxiety has moved beyond normal limits and is posing a safety risk to the patient. The ability to recognise subtle behaviour changes that move the patient outside normal expectations has been identified in the literature (Glaze 1999a). In working with the patient who has moved beyond 'normal terror' the nurses demonstrate their ability to make discretionary decisions[39] and share information with other team members:

When the patient arrives you know, the way we would visually and generally assess what's going on with this patient and we would

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[39] Discretionary decision making is addressed more fully in the 6th Layer.

156

actually speak to the anaesthetist and or the surgeons about this person privately, and ah you know, suggest to them that they might do so and so and so and so because this person is so and so and so and so, all those sorts of things. (Barry 238-346)

The nurses may respond to patients who appear more anxious than normal by rebalancing the technical and caring aspects in favour of the latter. Their activities include gaining intimacy through touching areas like heads, hands and feet, extending explanations, actively listening to the patients and encouraging them to talk about their concerns. They may also become quite protective, nurturing and proprietorial. The choice of actions is largely determined by the cues that the patient provides. Cues for action include dissonance between the verbal and non-verbal behaviours; the exhibition of or attempt to conceal anxiety; and active searching for supportive attention. Many of the nurses are skilled at looking for and recognising the cues. As Barry says, 'I always like to look at the patient and get all the, see all the subtleties that are going on with them, no matter what they're saying to you' (Barry 1256-1259).

The following field notes illustrate the ways in which nurses pick up and respond to cues from frightened patients. In the first note the nurses act on the attempted concealment of anxiety, increasing the amount of physical and verbal contact with the patient:

> The patient is trying to act brave, but the nurses are not fooled by this act and both the anaesthetic and scout nurses make an effort to touch him, talk and explain things to him. There is a great deal of eye contact, more than usual. (FN 940-945)

In the second note, the patient is exhibiting great anxiety in a context where a potentially negative surgical outcome exists. The nurse responds to his anxiety through nurturing and proprietorial activities:

> The patient has a gross swelling which he knows might well be a malignancy. He lies staring at the ceiling of the anaesthetic room with such intensity he almost lifts off the bed. His brow drips with sweat and his mouth chews the fronds of his substantial moustache. His hands and arms lie clenched to his sides. The anaesthetic nurse speaks to him, touching his arm gently to gain his attention. She asks him to pull the top of his gown down a little as he has to put the ECG dots on. He does and she looks at his chest, hesitates, then

157

smiles at him 'well I need to make a good connection so I'll have to shave a bit of this off' indicating his very hairy chest. He smiles tightly and nods. She shaves the minimum area, very gently, tells him the dots will be cold and applies them. She straightens his theatre cap and wipes sweat off his forehead with a cloth. (FN 2510-2527)

Sometimes the nurses may recognise the cues but are caught up with the demands of the technology that they are working with. While they may make an attempt to meet the patient's needs, it is unusual for them to stop their technical activities and give their full attention to the patient. They are more likely to continue to try and combine the two. The nurses' hesitation to focus solely on the patient's needs for supportive care may provoke the patient to provide additional cues. In the following case the sheer force of the patient's cues have a dramatic effect on the nurses' focus and activities:

> The patient is very uptight and agitated. The anaesthetic nurse and the scout nurse are with her and the anaesthetic nurse asks her how she is feeling. The patient tells the anaesthetic nurse that she is feeling awful and that she is really scared. Both nurses look a little taken aback and both say that she will be okay and that they will be with her in the operating theatre. They move away from her immediately and return to their busy work, getting equipment ready and documentation completed. The patient says that she is afraid of being in pain. The anaesthetic nurse glances over and moves in to the patient and begins to stroke her forehead and ask her what she had had done and what type of pain she had had. She continues to talk with and soothe the patient into the operating room where she is transferred onto the table. Once on the table the patient begins to shake uncontrollably and the scout asks her if she is cold or in pain. The patient says 'I'm okay' but the nurse touches her arm and says, 'no you feel cold'. She puts a warm blanket on the patient who says, 'I like this warm blanket idea' and gives the nurse a wan smile. (FN 4216-4239).

Not all nurses are skilled at recognising the cues that a patient may exhibiting and occasionally patients are left to make their own way through their anxiety:

> The patient is on his own. His bed is high up and his head is elevated. He is scared. His eyes bug out, his hands grip the bed rails, his teeth are clenched and he is pale. No one goes to him. (FN 1371-1375)

It is unusual, however for patients to be left alone. Making direct contact with patients is gaining increasing emphasis in the ORS as more and more patients have

158

their operations conducted with regional anaesthesia. The nurses are confronted by the changing techniques, expectations and values that accompany this technological change. As a consequence they must rebalance their technical and caring activities, drawing their focus away from the equipment and the operation, and placing it on the person a situation Barry recognises:

> But of course, regional anaesthesia has become more and more popular with fast tracking and day surgery and all the rest of it. And I guess it ah, you know, it forces you to get more patient focus, a person focus I should say. (Barry 1213-1218)

When a patient is conscious the nurses will be more inclusive in the way they provide nursing care. The patients will be included in conversation and will have their permission sought for activities that the nurses would do automatically for an unconscious patient:

> Two nurses observe the patient, talking between themselves, they tell the patient what is happening especially seeking his permission to cover his face with the green drapes (he will be awake through the procedure ... anaesthetic nurse ducks under the tented drape on the patient's face and has a chat with him. (FN 42-48)

Active inclusion of patients is, when considered in the light of holism, a very positive nursing activity. Given the nature and purpose of theatre however, and the technological challenges technology posed to patient safety, the question arises as to where the nurses should best concentrate their attention. There is acute tension between the demands of the patient and the demands of technology. If the nurse chooses to remain with the patient, the technologically focused tasks that would normally be completed during the operation ensuring a smooth and safe flow of activity must be held over until later. In the following field note the nurse stays with the patients and thus her ability to contribute to the surgical effort is hampered:

> The anaesthetic nurse reaches under the drapes and holds her [the conscious patient] hand asking her if she is okay. The patient [whose face is obscured by the drapes] tells her she is okay and the anaesthetic nurse tells her to keep holding her hand and she will be there for the patient. (FN 723-728)

The nurses usually do not have a long personal involvement with patients, but this does not prevent them from enjoying a particular patient or from judging patients negatively. Once again safety is a central theme in the nurses' response to these

patients but this time the emphasis is on the patient's own attempts to keep themselves safe. The nurses have a great deal of time, patience and humour for people who are confused following anaesthetic. Their behaviour, even though it may place them at risk, is considered to be out of their control. The nurses therefore maintain the responsibility of keeping control of the patients' progress:

> ... the anaesthetic nurse is the one who stays with him and keeps telling him that everything is okay and that there is no need to get out of bed and help to push it. She agrees with him when he tells her that he has just had an operation and that he is a bit out of it and keeps pushing him gently back into his bed. He is determined to take off the oxygen and she keeps returning it to his face reiterating that he needs it and must leave it in place. A couple of times she smiles at the futility of what she is trying to do and her voice bubbles with laughter but she manages to keep him in the bed with the mask on and get him out to the recovery area ... the scout nurse from the first operation is now in recovery and takes over recovering the patient. He is still determined to remove his oxygen. She is wonderfully calm but sees the humour in the situation and talks with him, replaces the mask over and over again and lays a hand on his shoulder every now and then to stop him getting up and going home. She grins ... and says, 'they're like this sometimes' and looks at him with unmistakable affection. (FN5287-5317)

On the other hand, patients who act in ways that increase the anaesthetic or surgical risk, (for example they might refuse treatment or withhold information that will effect their safety) and do so when they are conscious and orientated, are a source of frustration for the nurses. While they accept that people can and do behave counter to their best interests the nurses may express irritation to each other and/or withdraw empathy from the patient. In this field note the patient has taken partial control over her progress and is refusing treatment:

> The nurses have and continue to express some irritation with the patient. She is refusing antibiotics and she has, for various reasons an extremely high risk of infection ... 'Where do these patients get these ideas from?' says one nurse with a disbelieving and irritated shake of her head. The nurses mutter discontentedly with their heads down and close to each other while they busy themselves with getting the theatre ready. (FN 5338-5351)

While refusing treatment is an active decision on the patient's part, withholding information, even when this is unintentional, can also place the patient at risk:

The patient is prepped and draped. The first incision is made and everyone in the room draws breath. She's moved. The anaesthetist moves in and injects more medication as the surgical team moves away and the technician and anaesthetic nurse reposition the patient. They wait. The anaesthetist nods and the scrub team move back in. Another touch and she moves again. The technician and anaesthetic nurse grab her to stop her falling off the table and the scrub team freezes. The anaesthetist speaks quickly to the anaesthetic nurse telling her how much medication he has given and how much he will now give. They glance at each other silently. He injects and she documents. The scrub team looks tense and the scrub looks questioningly at the anaesthetic nurse who signals 'don't ask' with a terse shake of her head. Finally the patient does not move but on incision her pulse rate rockets up and the scrub and anaesthetic nurse both yelp 'she's feeling it!' The scrub team hesitates and the anaesthetist tops her up again. Her pulse rate falls and the tension in the theatre calms. The scout, who has been unimpressed by the whole thing explains 'She's been on something she hasn't told us about. It happens. They're very hard to anaesthetise' she gives a resigned shrug. (I.I. FN 4257-4284)

While on the whole the individual patients are not recognised by the nurses, the same can be true of the reverse. Throughout the perioperative period the nurses remain largely invisible to the patients.

The invisible nurse

The relationship between the nurse and the patient in theatre is transient and yet the vast majority the nurses' work is focused on the patients. The briefness of the encounters renders much of the nurses' work invisible to the patient. This situation is not lost on the nurses. As Jill says 'Most people don't remember the scrub nurse or even the scout nurse' (Jill 693-695). It is unusual for a nurse to be remembered by a patient even when the nurses introduce themselves and speak to them. Only very occasionally will a patient remember a nurse. One of the nurses was given a book by one of her patients and the inscription reads:

> *To one of the unseen, unheard yet angels of the operating theatre.*
> *My grateful thanks for your devoted care and skill. Thankyou*

While the inscription suggests that the nurse is remembered for the quality of care she provided this patient, nurses can be remembered for other reasons:

Yeah, we had a little girl in here and she wrote a letter to say thanks to the nurse in pink clogs. A dozen of us looked after her, but she remembered the one with the clogs. That's why you've got them isn't it (to the nurse in question), so the patients remember you! (I.I. FN 1187-1192).

The lack of contact that the scrub and scout nurses have with the patients may contribute to nurses not being remembered in the operating theatre. They are less likely to introduce themselves to the patient than the anaesthetic nurses who would, according to Jill, always do so (Jill 691-693). She adds that occasionally she will introduce herself but that this would depend upon how alert the patient was, the type of operation being conducted and was contingent upon her not being the scrub nurse (Jill 712-715). Lee adds:

> ... usually when the patient is in the anaesthetic room, the scrub nurse is already scrubbed, doing the scrubbing, so they really can't go into the anaesthetic room and when the patient comes in they are busy doing a count, I don't think it is them not wanting to, I think it's doing everything else. Whereas after hours, it's a bit more relaxed, the scrub nurse often walks up to the table and has a chat to the patients but during elective lists it is just rush, rush, rush. It can be that the scrub and the scout just don't have a chance. (Lee 669-680)

It is also questionable in this environment whether being remembered is always a positive thing as Jill muses:

> I suppose the birth of someone's baby is a memorable thing in your life and people will always remember what happened at the birth of their baby and if you went up to the mother and said, 'Hello, I am Sally or I'm Kate, Jenny' whatever, they may remember you, they may not remember you, but it is always a positive thing in their life and I think it is a nice thing to do if they are having a baby. You don't go up and say, 'I'm Phoebe, I am about to help doctor chop your leg off'. It is not necessarily something you want to be remembered for. (Jill 680-691)

Much of the nurses' work in theatre is invisible to the patient[40]. Preparation of instruments, equipment and theatres, voluminous documentation and meticulous planning and coordination of the department, the theatre and the lists pass unnoticed by the patients. The patients' brief, controlled journeys through theatre mean that

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[40] and to the multidisciplinary team (6th Layer).

they hear and see only what has immediate reference to them and the operation in hand. They are oblivious to the enormous time and effort taken in the preparation, conduct and clean up of their operations. This is never more evident when a patient does not present for an operation:

> A patient has not arrived at the hospital for her operation ... the scrub nurse is philosophical about the situation 'sometimes, they forget, or they have a cold and think they won't come in, or they just can't be bothered. They have no idea of how much time has already gone on preparing for them'. (I.I. FN 1098-1110)

The knowledge that patients do not understand what the theatre nurses do and therefore cannot easily see its value can be frustrating but this does not deter the nurses from providing high quality care and putting extra effort in to the work that they do. There seems to be an innate satisfaction and pride in providing excellent patient care even when the patient is unaware of it and will probably remain so.

The severing of the brief and intense encounters that nurses have with patients in theatre can leave the nurses with an unfinished story that they feel compelled to draw to a conclusion. The isolation and associated invisibility of the theatre nurses means that they are not naturally included in the hospital grapevine. The nurses sometimes seek information about the progress of a patient who has returned the wards. Often they will ask the medical officers who move between the wards and the ORS for information. There is little communication between the nurses in the wards and the theatre and no mechanism exists to enable the nurses to do pre and post operative visiting in the course of their paid work:

> And we talk about patient interactions and we talk about patients and empathise with their view and lament the fact that unless you actually meet up with the right doctor at the right time to find out how they got on, you never hear anything. And so, and um, and that was one of the things about pre and post-op visiting. How did that poor bastard get on, you know. And when you've moved heaven and earth to try and get them through this, whether the patient knew it or not. (Barry 1159-1169)

In general the patients may not remember the nurses and many patients will be forgotten as soon as they leave the theatre. Nurses are more likely to remember a patient and develop a more intimate relationship with them if they require a series of

operations. Even the scrub nurse may be able to develop a relationship with the patient under these circumstances as Rose explains:

> And even if you scrub, especially if the patient's not having a general anaesthetic and they're having spinal or a procedure under local and you get a lot of return patients. So the patients I've got to know, I'll have a chat to them or talk to them as they're doing you know, taking a lesion off under local, I chat to them while they're doing it ... some of the patients that I have met time and time again and they remember you and you remember them, and you say 'how are you going' and all the rest of it. But yeah, I like that. (Rose 436-455)

Forming a long-term relationship with a patient is unusual however the normal nurse-patient relationship is usually transient. Nevertheless the nurses feel great responsibility for their patients and consider that one further important aspect of their work is advocating for them.

Advocacy

Despite the brevity of the engagement that the nurses have with the patients, they assume the responsibility of acting as patient advocates. Given that they are registered nurses this assumption is only to be expected. The Australian Nursing Council Inc (ANCI) identifies patient advocacy as a core competency for registration as a nurse. License to practice as a registered nurse is dependent upon meeting the ANCI competencies. However the nurses in theatre appear to be caught between a professional expectation that they be advocates, and a culture that makes it very difficult for them to do so.

Definitions of advocacy suggest that it is pleading on behalf of another (Mardell 1997). Surkitt-Parr (1997) suggests that nurses must protect the patient and hospital from potential risks associated with new technology and suggests that in this light acting as a patient advocate is a nursing responsibility. The ORS nurses believe that advocacy is a central concern, a belief that is reflected in the literature (Schroeter 2000 and Dyke 1999). It would appear however that advocacy has a cultural definition within the ORS, one that differs significantly from the accepted form. It is interesting to note that a lot of what the nurses consider to be advocacy could be construed as the caring or humanistic side of their role. Activities such as positioning

164

patients and ensuring their safety and comfort directly care for the patient's physical and emotional well-being. They are not, however, activities that suggest advocacy is occurring. Perhaps by subscribing them to advocacy the nurses are seeking legitimacy for their caring activities in a technical work environment as Rose's comment suggests:

> You make sure that what's done to them is done in a safe manner. It's just basically they're in a position, that they've got you know, to ensure that the patient is safe and protected and all that sort of stuff when they're on the table, also, that they definitely give consent, because often consent explained to patients I think, is, by some surgeons anyway, in medical terms and a lot of the patients don't understand exactly what's going on, you know, you just see them, you book them in and you ask them, 'what are you having done today' and they reel off this big long word but they really don't know what it means. So often I say 'well can you tell me what part of your body we're operating on' and then they say a gallbladder or whatever, you know, so you're acting as an advocate there if you don't think they really understand what's going on um, by limiting the number of people that are in the theatre just to protect the patient's own um, privacy, the decency, the confidentiality and just, you know, they can't do any of that, and if you've got lots of medical students hanging around you often say, 'look there's too many people in here, can we get a few out'. So you're looking after the things that they would normally do that they can't do because they're unconscious perhaps ... (Rose 303-329)

Rose's ideas regarding her role as advocate suggested by her 'perhaps' reflects the uncertainty that surrounds advocacy in the OR. Times when advocacy (as traditionally defined) is required occur infrequently and cause tremendous tension in the nurses involved and potentially in the team as a whole.

Doing advocacy

The nurses act as advocates when there is real (rather than potential) danger of the patient being hurt, when an individual nurse is being asked to carry out an unsafe practice (and the other nurses appear to be supportive of that nurse), and when the nurses are all supporting each other and can undertake 'group advocacy'. Additionally, advocacy is more likely to occur when the nurses involved have assertive personalities. To be a patient advocate in the OR takes great deal of

assertiveness (Lee 107-108). Barry recalls an instance when the consultant surgeon was unavailable and a registrar was operating poorly:

> ... the senior nurse in the room who wasn't backward, and she actually pushed for somebody else to come and said, 'this is not on'. Because the registrar that was doing the anaesthetic wasn't prepared to step in. Now sometimes it takes a bit of courage and you really have to sort of stick your neck out a bit, but if we have to stick our neck out because it's for the patient's benefit, <u>we will do it</u>! (Barry 327-336)

While it appears to be hard for the nurses to actively advocate they may do so covertly. This may be through physical actions to prevent harm occurring to the patient. It may be through hinting that something is not quite right and allowing the medical staff to make the decision that the nurses want. It may be through leaving the scene and dealing with the issue outside the OR. For example during one operation the scout nurse was asked to pass a medication to the scrub team. She found the medication to be out of date by one day. When she was asked by the surgeon to get another ampoule and not check the expiry date on it. She froze, hesitating over what she had to do. Eventually she threw up her hands and said no 'I can't I just can't' and unable to face the tension in the room she left and found an in-date ampoule which she brought back in with her (FN 5600-5609). In the following example the nurse creates a physical barrier between the surgeon and the patient as a way of passively advocating:

> The first incision makes the patient [who is conscious] flinch. All three nurses say 'she can still feel it!' The surgeon asks the patient if she can feel it and touches the operating site with the blade, she flinches again. He moves to touch again. The scrub nurse quietly places a gauze square over the site, preventing any further activity and further local is prepared. The anaesthetic nurse squeezes the patient's hand and tells her what is happening. (FN 728-735)

If the other staff members are involved in acting in a way that may compromise the patient, the nurses actively re-engage a staff member to the operation at hand:

> The nurses become visibly uncomfortable as the jokes (which involve an aspect of the patient) get worse and finally the scrub nurse appears to shut off completely and get back to the point of the operation. She interrupts the surgeon and asks him forcefully what instrument he requires and passes it and the next with pointed speed and perhaps pressure. She demands the attention of the scout

166

nurse and draws her away from the admiring circle. (FN 2658-2667)

While it can be seen that nurses do advocate for patients it is clear that there are barriers they must negotiate to be able to do so effectively.

Barriers to advocacy

There are a number of reasons that advocating might be difficult for ORS nurses and these relate largely to the team and the relationships that exist between team members. The nurses are acutely aware that the surgeon can still have the final say, overriding whatever the nurses are concerned about. Jill observes:

> ... if they [surgeon] do something that you don't think that the patient has consented for or the patient wants or whatever, of whatever, you say something, you know. You can't necessarily, I mean, if the patient hasn't consented for something, all you can do really is bring it to the surgeon's attention, because ultimately the surgeon will override you if he believes you are wrong and he is right or whatever ... You can preserve the patient's dignity wherever possible and cover up and make sure, close the window to make sure they have got privacy and all that kind of stuff, but I have come close to situations where anything subsequent to their consent is not necessarily my final decision, whether I am a patient's advocate or not, so all you can do is cover yourself legally and say, 'look I tried'. But, you know, it is the surgeon's responsibility ultimately. It is a very tricky situation. (Jill 580-615)

Sometimes the nurses' efforts to act as an advocate fall flat, as other staff members are unaware of, or too preoccupied to recognise the patient's needs:

> The patient requires a sanitary pad to be replaced. The scout collects the pad and then tries to clear the room of the male staff. This proves to be very difficult as her veiled comments about the private nature of what she has to do go over their heads. Finally she draws one aside and tells him what has to be done. He says 'oh okay' with sudden comprehension and moves, but only to the other side of the table. The nurse and the patient look at each other in disbelief and a new strategy has to be derived where the patient is shielded from view. Finally the change is managed and the nurse has a brief friendly conversation with the patient making sure that she is more comfortable. (FN 4602-4618)

Advocating for the patient can have unpleasant consequences for the nurses, so nurses may hesitate to actively advocate for the patients. Barry describes a 'giant

167

smack ... reprimands from up above' (Barry 341-346) and Anne is also uneasy about advocacy:

> I don't know if it's because I think I'm not making a difference by saying anything probably. It's never appreciated anyway, saying something ... not by the patient, no the patient doesn't know. But certainly, you make yourself unpopular. You try to go about doing things surreptitiously really in that, that area rather than be too pushy. (Anne 253-265)

Anne's comment reflects the recognition in the literature that advocacy is difficult to do in the OR. Because of this the nurses have identified allies on whom they can call in a crisis.

Allies in advocacy

The nurses are not in a good position to act as advocates as their authority in the operating room is at a more subtle level than the medical staffs. It is also far more fragile. It seems odd then that they are the ones who advocate for the patient against the medical staff (most often the surgeon) and it is therefore somewhat understandable that they would call upon the anaesthetist to provide support, the anaesthetist being on the same authority level as the surgeon. In these instances the anaesthetist is often drawn in by the nursing staff to act as an ally[41]. Rose provides the following example:

> [The patient] wasn't unconscious, they hadn't been induced yet, she was very, very sleepy, and wasn't going to take much, but she wasn't a well lady, and the registrar and his resident came in and proceeded to lift up the patient's gown and I said 'excuse me the patient's not asleep yet, will you stop that', and it got nowhere and in the end the, the anaesthetist said 'have you asked me if you can do that' and they sort of looked and it wasn't even their patient, they were in the wrong room! (Rose 373-383)

Sometimes the nurses are not experienced or assertive enough to act as advocates. Although they are uncomfortable with what is going on, the situation is too intimidating for them to act. In the following field note the nurse is inexperienced and although she is very unhappy with the treatment of the patient she can act only through comforting the patient:

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[41] Interactions involving the Team, Club and the Family are discussed in the 6th Layer.

The patient must have a spinal anaesthetic and is very nervous. She asks the anaesthetist if it is dangerous and he says, 'honey, you're in hospital, everything is dangerous'. The nurse who is assisting puts her hand on the patients shoulder and squeezes it gently, looking at the anaesthetist pointedly. The anaesthetist moves to the foot of the bed and looks hard at the patient. She asks him if there is any risk and the anaesthetist looks frustrated and then coldly itemises every risk possible. It is unnecessary and the nurse huffs through her nose and looks intently at the patient while rubbing her shoulder and arm. When the anaesthetist has finished she says, 'a lot of patients have them here' and nods encouragingly to the patient who glances up at her and nods her head. (FN 4683-4699)

Barriers to advocacy do exist in the OR and emanate from within the teams. There is one barrier that relates to the patient that must be addressed.

Disappearing patient

The complexity of caring for, communicating with and advocating on behalf of patients is further complicated by what can be described as the disappearing patient. The patient is completely covered by green drapes. The operation site is visible but often nothing else. The patient's face, with eyes taped to keep them closed under anaesthetic, is covered by plastic sheeting to preserve warmth. Occasionally the patient's hand can be glimpsed, projecting out at right angles to the table to enable easy access to intravenous lines and pulse oximeter. The result is that the actual patient, as opposed to the operation site, may lie forgotten by the scrub team. As no extra space exists on the operating table once the patient is there, instruments may be balanced on the patient. A field note records for example that 'the surgeon is finished and tosses his instrument down the middle of the patient's legs which are obscured by drapes (FN2806-2808). Patients may be leant on, tubing is stretched along them and if they are awake conversations will be conducted that do not include them. The following field notes illustrate the disappearing patient:

> ... the assisting surgeon is standing right up on the points of her clogs to be able to position her equipment properly. She declines a stool that they [the scout and technician] offer her. It is interesting to note that in order to balance herself she must lean heavily onto the patient. (FN 955-961)

While the patient in the previous field note was anaesthetised, the patient in the following field note was fully conscious:

169

> The theatre is noisy. The surgeon and the instrument nurse talk, the anaesthetists join in at high volume, the nurses carry on their own conversation a little more quietly but not much, and the suture and dressing are finalised. The patient is undraped and she says, 'oh is it over? I didn't feel a thing'. This was the first indication that she had been awake through the procedure. (FN 1342-1351)

The nurses may make contact with the patients even when they are under the drapes as discussed earlier in this layer. Often the contact is unconscious or done in an absent-minded or preoccupied manner. For example they might curve their hands over the patient's leg that is under the drapes, or cup a patient's foot in their hands (FN2739-274; FN3926-3927). It is noteworthy that while patients disappear and while nurses are invisible they are together at defining moments in the patients' lives.

Dealing with the extremes of life

Nurses in the operating room may not have extensive contact with an individual patient but they are present at defining moments in that patient's life. The most significant of these moments are birth and death. Both are unusual in the operating room. The death of a patient and the birth of a child represent extremes in the every-day lives of the nurses. Birth is met with great joy and excitement and welcomed into the theatre. Death on the other hand is experienced with abhorrence in an area where technology usually triumphs over nature. The ORS is orientated towards decisive action. The expectation, the overriding hope is that things <u>can be done</u>. The desire to <u>do something</u> is central to the culture of theatre nursing. This tacit principle, engendering hope and courage is a driving force in the nurses' work lives. It enables them to commit themselves, time and time again, to the challenges each operation presents, even when they know the outcome is precarious. For example just prior to the start of a complex and dangerous operation a scrub nurse who had just spent over an hour setting up seven trolley loads of instruments commented, '... this poor fellow, well we might open him up and just have to close him back up again and we won't use this lot. I hope not, I hope there's something we can do for him' (I.I. FN 3519-3522). Not all operations will have happy outcomes for the patients and the nurses recognise and work within this understanding. Winnie reflects:

170

> I think that what we deal with in theatre is a lot of human tragedy. We deal all the time particularly in the public sector with horrible cases, with opening them and shutting them, can't do anything so close up particularly in big case and that type of thing happens frequently. (Winnie 537-542)

The nurses may feel sadness and compassion for the patient who will have a poor surgical outcome but do not feel personally responsible for inability of surgery to do something. This is clear in Lee's comment:

> Well, I guess we are not all heartless like some people assume we are and it really is quite sad if the patient comes in and they have to open and close and can't do anything. Yes, I think it's just compassion for the patient ...Well I feel I have a part to play and do it properly but if it is a matter of them opening a patient and nothing can be done I certainly don't feel like it's something, you know, it's not my fault but I just feel compassion for the patient. (Lee 511-525)

By far the most devastating event that occurs in theatre is, according to many of the nurses, a death on the table. In the ORS a death is usually unexpected and is considered to be an aberration, an occurrence that is not 'right' in an operating room. For example Penny illustrates something going wrong in theatre with the example of a death on the table (160-162). No patients died during the observation period of this study however so many of the nurses spoke about their horror of 'deaths on the table' that its significance to the nurses is unquestionable[42]. Lee captures the appalling nature of death on the table:

> It is an awful death, I hate it. Everything is left. The worst one I've ever had, we had three Category One's and had two theatres going and we lost our patient and they were really busy in the theatre next door and because it is a Coroner's case, nothing gets touched and it was awful because we had to all leave and go in and help with the other one and I just thought it was an awful way to leave a body, no dignity and the police came and we eventually got back to clean up, but this body was left with blood all over the floor and packs and things and it was just awful. Even if it isn't that case we have got time to lay them out, I still think it is a very awful death. You know on a ward, there is flowers around and it is more of a home experience, in theatre it is like a sterile death, you are stuck in a room with all these strangers and no family around. And then you have to leave the patient how they are until the

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[42] Although this aspect of theatre life was not directly observed, it is included in the account.

Coroner comes, which can be hours. You know, It's pretty awful. And it's even worse if you know the patient should never have come to theatre. (Lee 554-576)

While the nurses are able to protect themselves from feeling personally responsible and involved when an operation has a poor result but an alive patient, they are more likely to find this difficult when a patient dies. This is particularly the case when a personal connection can be made between the nurse and patient:

Probably my worst experience with a death on the table was somebody who was exactly my age and had children the same age as mine and yeah that sort of reality where you can relate to it personally, and yeah that was an MVA[43] and she was dead, and just came up as a last ditch effort. (Winnie 521-527)

The age of the patient also seems to be a significant issues for the nurses as Rose suggests in her story of a young nurse's grief:

I had one situation ... where a young staff member had been involved in trauma case where a young man had died on the table. And she came to me the next day because she was still really upset, and hadn't slept that night and she just wanted someone to talk to. So we went down to my office and talked about it...Now this girl, she was only trained a few years, and she was quite good, so she wasn't out of her depth, but all of a sudden this patient had died, and there was none, there was not counsellor there because it was after hours and she just went home that night and obviously stewed over it all night and wanted someone to talk to ... But she needed to grieve in that respect and get over it, and it took her quite some time to feel comfortable again. (Rose 947-968)

In the next story the horrible drama of a death on the table is clearly described by Rose. She also describes the difficulties experienced by staff to gather themselves together and continue operating after a patient has died. In this excerpt the harshness of the tension between the pressures of the expectations of theatre driven by its technological imperative and the need for the staff to take time to engage with the caring side of their role is baldly evident:

... if that patient doesn't survive, especially if you're talking to them beforehand and you've got that intimate rapport with them. I had a couple of deaths that I just thought, what, one was, well she, the patient was an oncology patient, she was going to die, but she died a lot quicker on the table and it was particularly bloody, it was

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[43] motor vehicle accident.

something we couldn't do anything about and we basically saw her drown in her own blood because it was in her bronchial tube and there's just blood coming out her endotracheal tube and we couldn't suck it away. And it only took like a minute, but that minute was just, just blood everywhere and that was really hard because you'd spoken to her beforehand and the surgeon felt, that particular surgeon he always felt hard hit by his deaths, and [he had] a few deaths because of the nature of his surgery. You know, you'd say he had more deaths than others but the nature of the surgery gave him sicker patients to start with and more invasive procedures and that sort of thing. So that, that really hit and then it didn't help the fact that he had to do another case exactly the same and the anaesthetist wanted to come straight back and do it. But because it involved a piece of equipment that only a few of us were trained to use, we couldn't just slot him in, it had to be the same team that came back, and he [the anaesthetist] wanted to. And the surgeon said, 'no I'm not doing that, I'll come back and do it tomorrow'. He didn't want to do it. But then the anaesthetist wanted to start the emergency list in that room, yet we, none of us were ready at that stage to actually go back and, you know, because he [the anaesthetist] was fine, once the patient was pronounced dead, he wrote his note, he left and then we did the layout and all that sort of thing. So that was hard. (Rose 889-924)

This death, captured so emotively by Rose appears to be so awful that she must extract herself from it. She shifts the ownership for personal sorrow to the surgeon and justifies the shock and devastation felt by the team through his reactions. She also gives ownership of the death to the surgeon 'his deaths' and justifies the death, attempting to normalise it in this instance by stating that in the type of surgery it was there were a higher than usual number of deaths. She also shifts from 'I' to 'you' as she narrates distancing herself from the horror. The need to see death as controllable, the reasons for it as understandable may be another way of coming to terms with it.

The way in which the ORS functions to meet its central purpose means that even in the face of a patient's death there is tension between technological and human caring. The conflicting demands can make death even more horrible in the eyes of the nurses, a conflict that Lee captures:

The family never come up and see the body, the Coroner comes in and they are whisked away and left with everything hanging out you know, and not made to look nice, although they are washed and we try and make them look reasonable, it's just a horrible way to die, I think. (Lee 593-598)

173

At the other end of the scale is birth and the excitement and enthusiasm generated by the news of a caesar is infectious. As one of the nurses said, 'it's the only operation you end up with more than you started' (I.I. FN 5418-5419). Winnie explains the reason for the jubilation with which the nurses receive news of a caesar:

> There's a lot of, a very harsh side to what we do, whereas babies are absolutely at the other end of the scale, because they're wonderful, happy and it's life and um. And in that theatre too we do a lot of terminations of pregnancy and you know one tends to, sit on the fence, but you know there's a tragedy in every story and I don't mean the tragedy of abortion, but the tragedy of the patient, I mean it's really such a simple procedure. But having a baby it's wonderful, absolutely lovely, really emotional to hear the baby crying yes, see the baby crying yes, see the dad cry that sort of thing. (Winnie 542-554).

During a caesarian operation the caring and technological aspects of the nurses care interweave comfortably, balancing each other and contributing to the safety and joyfulness of the event. This final story captures one of the most joyous aspects of operating room nursing:

> 'We're having a baby!' the scrub nurses eyes are alive with excitement and humour as she includes the anaesthetist in her exuberance. Her trolleys are laid out and ready to go and she checks over and over her instruments, glancing round every now and then to see where the rest of the operating team are up to. She can't wait to start and is bouncing up and down on her toes. The patient with her hugely swollen abdomen is transferred onto the table by the anaesthetist, anaesthetic nurse and two scout nurses. The scout says to the patient's partner, 'just stand over there until we're ready' (indicating the door jam) and he presses himself obligingly into the wall. She pauses, looks across at him and smiles 'it's all a bit busy but you'll be sitting right there where they are in just a minute (indicating the anaesthetic nurse and anaesthetist). She moves in to the patient and begins to talk with her, explaining what is going to happen and answering questions. The nurses are with the mother. They smile at her, stroke her shoulders and arms, converse gently with her and include the partner in the conversation. The nurses' eyes radiate happiness and the room just bursts with pleasure and excitement. The registrar enters and gowns. The nurses like her and speak with her in a friendly manner. The resident comes in after her taking longer to gown and glove. The mother's abdomen is awash with Betadine and the drapes are gently placed. The registrar makes the initial incision and the scrub nurse passes instruments quickly and automatically. Her focus on the operation site is intense but it is something else as

174

well, there is eagerness, a sense of anticipation. The scout nurse stands watching the operation site also. 'Ok?' the registrar nods at the scout and the screen in front of the patient's head is taken down and the baby is brought out alive and kicking away. The staff as one all move in to the table and look at the baby, smiling and pleased. They congratulate the mother and father and laugh as that tiny new voice makes itself heard. 'Now, what brand have you got?' the registrar asks and multiple voices chime in, 'it's a boy'. The drape screens the mother's head and shoulders again and there are now two sides to this operation. Up at the top end is the lovely scene of the mother, father and baby, tears and emotion, congratulations, touching and smiles. The anaesthetic and scout nurses move fleetingly in and out of this scene. Over the other side of the screen is business as usual and the atmosphere has changed from one of eager anticipation to a business like style no different from any other operation. But it is different in a way. There is happiness and human warmth in this theatre and that lingers. (FN5321-5416)

Closure of the 4th Layer

The relationship that exists between the nurses and the patients is one of the three cardinal relationships that exist in the ORS. The relationship is principally concerned with ensuring the safety and well being of the patients through their perioperative journey. In order to do this, the nurses use a number of strategies. These include balancing the technological and caring elements of the care they provide; working with limited patient contact, and advocating for the patients.

The first strategy is characterised by a struggle between the technical tasks that the nurses perform and the activities that they undertake to promote the patients' physical and emotional safety and well-being. While arguments exist that suggest that the use of technology is implicit within all nursing care, the OR nurses appear to respond to the criticism that they do not do 'real nursing'. To this end they persist in dividing the two components of their role. Observations suggested however that in practice the nurses combine these two elements of their role to provide sophisticated patient care within which discretionary clinical decision-making is evident.

The time that the nurses have with each patient is limited. Although they tend not to engage with patients as individuals there are exceptions to this. The nurses take a

special interest in patients who are unusual. The patient who is a crumble or who has moved beyond normal terror will attract the nurses' attention.

The nurses consider advocacy to be an important aspect of their role within the nurse-patient relationship. They tend to define advocacy in culturally specific ways and experience difficulty in truly advocating for their patients. Barriers originating from the team and the patient contribute to this difficulty. At times the nurses respond by calling upon other team members, notably the anaesthetist, to act as allies in advocacy.

Finally, the OR nurses are with patients during defining moments in their lives. The extremes that the OR nurses contend with are births and deaths in the operating room. These extremes are met with extreme emotional responses from the nurses. Death is considered to be an appalling aberration of what should occur in the OR, and birth, via caesarian section, is welcomed with joy.

The effectiveness of the nurses' engagement with patients is supported by the two remaining cardinal relationships. The first of these is the OR nurses and the permanent team.

The Fifth Layer: Operating Room Nurses and the Permanent Team

Opening story

'I'll have this, this and that, oh and one of these'. The nurse steps away from the corridor cupboard, elbowing it closed, arms laden with sundry packages. She disappears into the Core. Inside, surrounded by the regimented steel shelving and an impressive array of sterile packages, she dumps her selection on one of a small group of trolleys and rapidly checks through a long list of required equipment. A hospital aide glances questioningly at her. They briefly discuss the equipment, comparing it with the list. The aide disappears amongst the shelves and returns bearing yet another package. A technician comes into the Core and asks the nurse whether or not she still needs a light source for the first case. She shakes her head, her eyes smiling at him over her mask. 'How was last night?' She's about to answer him when another nurse sticks his head through the door leading from one of the surrounding operating rooms. 'Okay?' he queries indicating the trolleys of equipment. 'Yeah, I'll be through in a minute. Is the patient here?' 'Yep, he's a crumble. They're having trouble getting lines in. Anyway we're not due to start for another hour'. She nods her head and begins pushing trolleys through to the operating room. Another nurse ducks into the operating room from the corridor holding a mask on untied and asks generally. 'Do you know what happened to that set we used last night?', 'It might be down in CSSD still', the original nurse brushes past on the way to the scrub sinks. 'Oh that's just fabulous, we need it now!' Inside the theatre the scout nurse carefully unwraps the sterile gown for the scrub nurse and selects a pair of gloves for her. He hesitates briefly and calls out to her 'you're a 7 aren't you?' The first cascade of water rushes into the scrub sink.

Introduction to the second cardinal relationship

The second cardinal relationship that emerges in the ORS exists among the nurses. To a lesser extent it includes several other staff groups. As the largest single professional group in the ORS, the way in which the nurses interact with each other has significant impact upon the culture, just as the culture has significant influence

177

upon these interactions. It would seem that only staff members who work exclusively in the ORS (ie. ORS-dedicated staff) may contribute to this relationship. Therefore the staff members who are involved include the ward clerks, theatre technicians and hospital aides.

The fifth layer explores the relationships that exist amongst the nurses and within the permanent team in terms of the ORS culture. The scope of this research does not extend to a discussion around the relationships that other ORS-dedicated staff members have with one another.

There appear to be three broad relationship modes that exist amongst the nurses. These are the professional mode, the social mode and the teacher/learner mode. The professional mode incorporates the formal roles of the OR nurse (scrub, scout, anaesthetic and recovery room) and also an informally constituted role, the relieving nurse, or 'floater'. The social mode is an egalitarian relationship in which the nurses discard their professional roles and participate in purely personal social interactions. The teacher/learner mode allows the nurses to participate in active teaching and learning roles. Each of these modes contributes to the second cardinal relationship. That is the relationship the nurses have with the 'permanent team'. Activities that occur within this team relationship create the solid substructure of the ORS. This substructure supports the safe conduct of surgical operations, which is the central purpose of the ORS. Although interrelated, the three modes and the relationship that they contribute to have been separated to simplify discussion. The 'permanent team' is presented last because it leads directly to the focus of the sixth layer, the co-existing 'multidisciplinary team'.

The professional mode

The roles of scrub, scout, anaesthetic and recovery room nurses form the basis of the professional mode. These formal roles of the operating room nurse are well documented in the literature. Within Australia they are described in the ACORN Standards, Guidelines and Policy Statements (2000). The definitions and criteria for these roles are reproduced in Appendix VIII. The responsibilities of the roles can be summarised on the basis of the ACORN Guidelines as follows:

The anaesthetic nurse

The anaesthetic nurse works in conjunction with the multidisciplinary team to provide patient care related to anaesthesia. This includes assessment and ongoing monitoring of health status prior to and during anaesthesia, risk management, positioning and advocacy. Responsibilities also include care of the anaesthetic equipment and documentation related to health assessment and anaesthesia. Because the anaesthetic nurse in the ORS does not stay in the operating room for the duration of the operation, this role does not receive the same emphasis in this layer as the scrub and scout roles.

The circulating nurse

The responsibilities of the Circulating Nurse include preoperative assessment of the patient, provision of relevant, functioning equipment; protection of the sterile field and sterile supplies; anticipate and meet the needs of the surgical team; accounting for equipment; risk management; related documentation and patient advocacy. The circulating nurse must work as a collaborative member of the multidisciplinary team. Within the ORS a nurse undertaking this role is called the *scout* nurse.

The instrument nurse

The Instrument Nurse is responsible for the sterile set-up prior to an operation, anticipating and meeting the needs of the surgical team, protecting the sterile field, risk management, patient advocacy and accounting for equipment. The guidelines state clearly that the instrument nurse will not act simultaneously as the assistant to the surgeon when a body cavity is open. Within the ORS a nurse undertaking this role is called the *scrub* nurse.

The post-anaesthetic care nurse

The responsibilities of this position include management of the airway, pain, temperature, nausea and vomiting and the related documentation. Prevention of immediate postoperative complications and patient advocacy are also incorporated into this role. In the ORS a nurse undertaking this role is called the *recovery room* nurse. Because this role operates outside the operating room it is not explored in this thesis.

Multiskilling is actively supported in the ORS as a way of pursuing high quality patient-focused care in a relatively small unit with a limited budget. Multiskilling is an accepted means of addressing these issues within health care settings (Gates & Sandoval 1998). It is well suited to the needs of the ORS. As multiskilled practitioners the ORS nurses are able to provide nursing care in any of the four formal roles. Thus any nurse in the ORS can take on the relieving or 'floating' role. This role, while not formally recognised, is included in the professional mode because the relieving nurse takes on the formal role of the nurse who is being relieved. A relieving nurse may, therefore, act as a scout nurse in one theatre and then move to another theatre and take on the role of the anaesthetic nurse. Robin recalls his experiences with multiskilling:

> I've worked in one day here where I've been a scrub scout nurse,
> I've worked um from the anaesthetic nurse when they went to tea,
> and because we didn't have any attendants on that day I also went
> as the attendant getting the patient on and off the table back down
> to the recovery room and back again, and also cleaning up the
> theatre (Robin 132-140)

Although the nurses are able to work in each role, most have preferences and as has already been noted the role of reliever is not always popular. While clearly delineated in the literature and the ACORN standards, the formal roles of the nurses are not well understood by people outside the ORS. For example Lee suggests that, 'a lot of people think that the scout nurse just sets them up, fills in the count sheet and sits on her bum until the end of the case (Lee 133-136). Indeed the role of the scrub nurse has been likened to that of a mindless automaton performing work that a monkey could be taught to do (Conway 1995). Notwithstanding a lack of external recognition the four formal nursing roles and the relieving role, form the fundamental working unit upon which the ORS functions. Together the roles fulfill four critical purposes. Firstly they enable a coordinated pre, intra and postoperative effort. Secondly, they allow the nurses to manage the different physical territories in the ORS in such areas as sterile/unsterile communication. Thirdly they permit the nurses to keep control over the ORS and ensure that the area functions as a whole rather than simply meeting the needs of one operation to the detriment of others. Finally they support the nurses efforts to maintain the standards of the ORS and contribute to risk minimisation and patient safety and well being.

Coordination of the pre, intra and postoperative effort

The formal roles played by the nurses in the ORS enable them to manage the patient's journey through the theatre in a methodical manner. This has impact upon the wellbeing of the patient and on the atmosphere within the ORS. By ensuring an orderly sequencing of events the nurses can reduce the impact of surgery on the patient. For example the length of anaesthetic time can be reduced, the patient is not kept exposed or in an uncomfortable position for longer than necessary and is not left waiting for long periods wondering what is happening. For this to occur the anaesthetic nurse must communicate the patients' progress in the preoperative phase, the scout and scrub nurses must communicate their readiness to receive the patient for the intraoperative phase and must communicate with the recovery room nurse when the patient is ready to enter the postoperative phase. The patient can then pass smoothly through all three phases. Although the scout nurse appears to play the most significant role in the overall coordination and control of the pre, intra and postoperative effort, liaison with other staff members, particularly the medical staff, is essential for the process to work well. Rose describes this essential liaison:

> I'd say the scout nurse is the overall traffic director if you want to put it that way ... but um I wouldn't go [so far as] to say that they control absolutely everything. You tend to work with the anaesthetist to control all that. Did you notice that the anaesthetist will often come and say 'are you ready for us to come into the theatre', and you can say 'well, no give us 5 minutes because so and so hasn't done this before, they want a few more minutes'. They'll actually ask us, or some of them will anyway. But um, so together you sort of control and if their doing a central line on the table before we start and they don't want the surgeons up there, you know you're controlling for that respect, so you liaise with them. (Rose 824-839)

An experienced and organised scout nurse maintains the flow of an operation even when it is threatened during an emergency or when working with inexperienced staff. Lee explains the importance of the scout nurse:

> A few people have said to me that if you've got a good scout you're right, there is a bit of a debate about if in an emergency you've got a beginner do you scrub them in or do you scout them in. Most people would say you would scrub them in, if you've got a good scout they can point and still run for things. And a scout that watches what's happening too ... if you work with someone long enough, you know, they will see you running out of packs and

> just give them to you and you get into a routine where you don't really need to ask for much, it just sort of happens … They [scouts] need to do a fair bit too, they have got to watch out for the sterile field and check out what is going on. A lot of it is down to organisation and a lot of that comes from experience, knowing what you are going to need. (Lee 120-141)

Because they play such a critical role, laziness and lack of interest on the part of the scout are not tolerated easily. It causes tension between the nurses that is evident in the following field note. The scout nurse has been asked to give her stool to the registrar who is assisting with the operation:

> She looks disgruntled and slowly heaves herself up. 'It takes a lot for me to give up my stool' she says and pushes it over to him. She stands, one hip pushed out arms folded, face bored. She's irritating the anaesthetic nurse who is a busy, little figure, sorting and stocking, documenting and checking. The scrub keeps glancing at her but does not succeed in making eye contact. Fortunately they don't need anything until right at the end. The scrub asks the scout to fetch an item, 'which one do you want the [item a] or [item b]' her tone suggests that she really couldn't care less. The scrub clarifies with the registrar and repeats it to the scout who slouches over to an extras tray and fishes out the appropriate item. She hands it to the scrub who mutters inaudibly. The scout shrugs, 'well anything for a quiet life' and settles back into her position gazing off into the distance. (FN 4290-4309)

In this field note the situation appears to be tolerable because the scrub nurse did not require a great deal of communication with the scout nurse. However during times when the scrub nurse needs support tension rises quickly:

> The scout slouches in and there is immediate tension. The scout and scrub nurses are so different, mismatched. The scrub nurse is efficient, enthusiastic, particular. The scout nurse on the other hand is doing the bare minimum and the scrub has to ask her to do things that other nurses have done automatically. Finally he has enough and when she does not hand him an obvious item he stands motionless and looks with pointed intensity at her. It takes her a minute to realise that things have changed and she flashes him a look and says, 'oh I'm sorry James I'll get it' and from this point onwards she becomes more 'on the ball'. (FN 4350-4362)

Disorganisation that occurs through lack of interest has a negative impact on an operation but it can be rapidly corrected and the nurse can be re-engaged. The cultural expectation that nurses will maintain high standards of practice that will

contribute to the ORS effort provides a strong incentive for nurses to engage actively. It also provides solid support to the nurses addressing a colleague's lack of interest. In the previous field note, the cultural imperative of activity meant that the scrub nurse could deliver a very powerful non-verbal message to the scout nurse with immediate results.

Disorganisation that occurs as a result of inexperience is less easy to overcome. The significance of experience and organisation to the flow of an operation is clearly evident when two inexperienced nurses are working together. When both the scrub and the scout nurse are learning the roles, their ability to maintain high standards of anticipation and responsiveness to changing situations is compromised. The rhythm of the operation can become very disrupted. In the following field note the scrub nurse is inexperienced but has reached a stage where she does not require the direct support of a double scrub[44]. She has reluctantly agreed to let the double scrub go to tea. The anaesthetic nurse has left the theatre and the scout nurse is inexperienced:

> A couple of minutes after she [the double scrub] has left the registrar asks for an item that is not on the trolley and the scrub nurse moves her hand in a dabbing fashion across her trolley checking off each instrument and then looks blankly at the registrar and asks for more information. He describes what he wants and the scout who has realised something is amiss leans in to hear better. She asks for clarification telling him that what he has asked for does not come in the size he has specified. The registrar and scout have a rapid verbal exchange and the scrub looks bemused and worried. The scout goes out to get the item ... she empties it into the scrub nurse's hands who then spends a short time looking at it and turning it over. She seems very unsure of herself and the scout does not say anything ...another nurse comes into the room and she has a lot of experience in the area. The scout almost falls over herself with relief and starts to question her about the item...Finally the nurses sort themselves out and the right item is found, prepared and handed over. The rest of the operation goes smoothly. The anaesthetist asks how much longer the operating doctors will need and the registrar looks at the scrub nurse and says with good humour 'that will depend on the nursing staff'. (FN4885-4947)

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[44] An experience nurse scrubs with an inexperienced nurse in order to support the learner and ensure the safety of the patient.

It can be seen from this field note that the ability to be highly organised and competent in anticipating what will be required during the surgical procedure contributes significantly to the effectiveness of the scrub nurse. Indeed, the need to be able to anticipate which instruments will be required and then to account for them is implicit in the cultural determination of what constitutes a 'good' scrub nurse. Lee encapsulates these attributes in her interview:

> Organisation, assertiveness and knowledge, knowing what they are actually doing and what they are going to need and it helps to know surgeon's idiosyncrasies too, but organisation definitely, knowing that you have got what you are going to need and you know, you are not sending the scout running for everything, you can search and make sure it is all there (Lee 100-107)

Barry concurs with Lee emphasising the need for high levels of organisation with the instruments. He states:

> And those sort of people with the dog's dinner trolleys are a real worry, because then you're keeping track of stuff because it's a corporate responsibility ... between you and the other nurse to ensure that the count is all there, it's all there and it's all correct (Barry 619-626)

In this excerpt, while Barry makes it clear that disorganisation is not welcomed in the ORS, he also alludes to the importance of nurses recognising their responsibility to the team effort. This, it will be argued shortly, holds great significance to the way in which the permanent team functions.

For the nurses to coordinate the pre, intra and postoperative effort they must be able to communicate and facilitate communication between sterile and unsterile territories. That is, they must be able to allow interaction between the sterile field and the unsterile space that does not breach sterility but ensures an adequate supply of equipment and access to waste disposal.

Communicating between territories

As discussed in the 1st Layer both the scrub nurse and the scout nurse protect the sterile field. It has been argued that within the ORS the scout nurse appears to have the broader brief, watching the whole of the theatre and ensuring that all staff members are mindful of the sterile field. For example the scout nurse will ensure that

184

new staff members do not contaminate themselves when gowning and gloving, a process that occurs away from the main sterile field and the scrub nurse. The intensity of the scrub nurses' concentration on the surgical activity appears to limit their field of responsibility to the immediate sterile area. Therefore, while it would be unusual for a scrub nurse to correct a breach of sterility during gowning, he or she would act to prevent contamination if a newcomer, seeking to gain a closer view of the operation site, threatened the sterility of the instruments. There are however many times during an operation when equipment must be passed between the sterile and unsterile territories. The scout nurse plays the central role in affecting efficient and safe communication between sterile and unsterile areas (see Illustration 2).

Because the scrub nurse is confined to the sterile field, the scout nurse must maintain a high level of availability if communication between the territories is to be effective. As a conduit between sterile and unsterile territories the scout nurse is of little use if she or he leaves the room. Consequently scout nurses must check carefully that the surgical team, particularly the scrub nurses, will not require them if they need to make, for example, a brief foray out of the theatre into the Core to collect equipment. The unexpected absence of the scout nurse can have great impact on the performance of the operation. Without the scout nurse the scrub team can become immobilised as the following field note illustrates:

> The operation is in progress and a nurse enters the operating room and tells the scout nurse that she will relieve her for tea. The scout looks over to the scrub who is focussing intently on the operation and does not look up. The scout leaves the room anyway. The relieving nurse looks at the operating group, sighs and leaves the operating room as well. The people left in the theatre include the patient, scrub nurse, surgeon, registrar and anaesthetist. The surgeon asks for a suture and the scrub looks up, glances around the room and blinks in frustration. The operation cannot continue. (FN 1404-1412)

Illustration 2: The scout nurse: a vital conduit between sterile and unsterile areas

Loss of the vital link between the sterile and unsterile territories can add to the risk of an operation by increasing the length of time the patient is in surgery. Without the scout nurse, the scrub nurse and therefore the surgical team are unable to get assistance when it is required. When scout nurses leave the theatres, they leave the scrub team marooned in the sterile field. Robin reflects the sense of helpless isolation in his comment:

> I've been in theatre when suddenly the place is empty of nurses
> and no-one is in there except for anaesthetists, the surgeon and
> yourself and, like, I need help, 'Helloo!' I don't think that's a very
> good situation to be in. (Robin 240-245)

It appears clear that good communication between the scrub and the scout nurses, and their related territories, is fundamental to the safety of the patient and the smooth articulation of the surgical procedure. Patient safety is also partly maintained through the high degree of control the nurses wield in the ORS. The nurses' influence ranges from overt control of given aspects of the ORS to subtle manipulation of the area and the people in it. Although risk minimisation is certainly one agenda for maintaining

186

control, others exist and centre on the management of time and space. The more subtle manipulation that occurs during the multidisciplinary teamwork is addressed in the 6th Layer.

Controlling the ORS

The nurses recognise both the need to control the ORS and their ability to do so. The notion of control is somewhat negative and in the nurses' own explanations of the ways in which they control the theatre, they appear to respond to the negative image, attempting to justify and weaken the strength of their control. Control, therefore, is most readily accepted when it is used for the sake of the patient. For example, although the move is sometimes unpopular with the medical staff, the nurses will occasionally slow the start of an operation down in order to organise themselves and the equipment in the best possible way to promote a safe and efficient operation. Lee recognises that the nurses' control may be construed as obstructive and alludes to this in her comment:

> I guess the underlying factor is the patient again. I was always taught, it's just little, little subtleties I guess and you learn a way of doing it subtlety rather than being outrightly difficult, so to speak.
> … and that doesn't go down well, but that's one form of control I guess. (Lee 723-743)

While the principal justification for controlling aspects of the ORS is the patients' safety, the smooth functioning of the ORS is equally important in terms of controlling time and space. For example one of the theatres is larger than the others. It is very popular with the surgeons. The nurses must ensure that operations requiring large spaces (such as operations that require medical imaging equipment) are given first preference for the large theatre. The nurse in charge of the ORS will determine the use of theatres during working hours, formally controlling space. Similarly this nurse will work out the surgical lists and make sure that the surgeons are provided with their fair share of operating time during working hours. This exercise can be problematic as discussed in the 2nd Layer. The coordination of time and space can be further complicated by a lack of communication regarding unexpected cases as Jill illustrates:

> Recent times, I don't want to identify anyone, we have had a case when a child was booked and we were ready to go with the child.

> Then ICU ring up and say we've got an emergency, a laparotomy that needs to be done and it is a different surgeon and the surgeon that booked the laparotomy, who booked the child, turned up at the door and said, 'Quick, do you want to do the laparotomy?' and I'll say, 'Not ready' and he'll say, 'Well, I rang the surgeon'. And I said, 'But that's not the surgeon who's doing the case'. And he said, 'What are you talking about?' 'What are you talking about?' you know and it turns out it was another laparotomy and he hadn't told anybody there was a second laparotomy and I said, 'well what are we going to do about this child here at the door, parents getting more and more irate?' (Jill 471-488)

While the formal process of booking lists supports the nurses' coordination role during working hours, less formal strategies must be used for managing time After Hours. Lee illustrates this:

> ... and then there's a lot of after-hours surgeons competing for theatre time. That's a time when nurses sort of don't, they don't decide who goes next but we just say, 'figure it out with Mr So and so, he's next'. That's your role, they are very, they try to push in and we say, 'no, we have to do ours you know, rah rah rah.' and you know a good theatre sister when she says, 'please ring such and such he's in here, you talk to him'. (Lee 762-777)

The nurses recognise that After Hours they do not have the formal support of theatre lists and are therefore caught between surgeons competing for time and space. Rather than entering directly into the conflict about space the nurses control the conflict by deflecting the argument away from themselves and back towards the antagonists. It would appear that this has as much to do with control of ORS space than it does to controlling the atmosphere and therefore the overall functioning of the ORS. This is discussed in detail in the 6th Layer. Lee also alludes to the maintenance of standards (in this case dress and sterilising standards) within the ORS (Lee 743-761). This is also a form of control within the area and is supported by the formal roles and the responsibilities that accompany them.

Maintaining standards

In the ORS the emphasis on maintaining standards is striking. It is a taken-for-granted understanding amongst the nurses that they have responsibility for making sure that the standards of such things as dress, asepsis and patient safety are maintained. This may be because nurses perceive, as Lipp (1997) argues, that

188

members of the surgical team who are not based permanently in theatre are not wholly committed to quality improvement within it[45]. The ACORN Standards, Guidelines and Policy Statements (2000) reflect this interpretation This publication places the responsibility for maintaining and improving standards squarely on the nurses. In a high-risk area like the ORS, that is considered to be hostile to both patients and staff alike (Taylor & Campbell 1999b) the nurses must adhere rigidly to the rules, standards and policies in order to manage and reduce risks. This means that the nurses must pay great attention to the minutiae of the ORS. Barry provides the following example of how this reduces the risk to patients:

> ... like for example you know, joint replacements. There's whole masses of sets of instruments come in. They have to be all marked off meticulously and they have to be prepared by CSSD and has to be all correlated with everything else and you know, and it doesn't just happen and you know to get the infinite detail with which the nurses attend to, to get to the point where we actually do the operation. (Barry 142-151)

While it could be argued that this level of compliance may create a blinkered approach to decision-making[46] it may also be this very attention to detail that provides the surgeons with the freedom to take necessary risks when operating. The safety provided to the patient, surgeon and the team in general by the meticulous performance of the surgical 'Count' is a good example of this. It also illustrates the way in which the formal roles and responsibilities that accompany them enable the nurses to attend to the details of their work even when put under pressure to short cut some processes.

The 'count' is one such detail that is important to risk minimisation. It is enacted through and protected by the formal role responsibilities of the scrub and scout nurse. Counts occur at specified times during the intraoperative period (prior to the first incision and prior to each cavity closure). During the Count the scrub and scout nurses simultaneously count sets of equipment, for example instruments, swabs, blades and needles, and document the totals on the Count Sheet. Everything counted

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[45] In the ORS there are medical staff who are committed to specific areas of quality improvement such as infection control.

[46] See 6th Layer, glove changing field note.

must be found and seen by both nurses. In this way they can ensure that all equipment is accounted for. Barry explains this:

> And it's not a matter of just saying, 'well the needle isn't in the patient', that's no good, you know, because if it's on the floor that's no better anyway because we need to find it because if for example a needle went missing in the next operation we might find that needle and think it was the one that was in that patient and it wasn't at all. (Barry 815-821)

Once the final count has been completed the surgeon can safely close the surgical wound, knowing that no foreign items have been inadvertently left inside the patient. Although some surgeons may begin closure prior to the Count being completed and run the risk of a discrepancy being found, most wait until the nurses state 'Count correct' before closing. The nurses' perception of the importance of the Count overrides other demands on the nurses' attention as Lee illustrates:

> ... when you're closing up a patient, you're trying to get your final count done and you're rush, rush rush, [and the surgeon says] 'Give me this, give me that', again you can say 'I'm sorry, you will have to wait until I finish my count'. (Lee 764-768)

Understanding the significance of the Count and behaving appropriately when it is occurring is a cultural expectation that must be learned by newcomers. While the nurses are formally taught about the Count during orientation to the ORS, for others it may be a matter of uncomfortable discovery:

> The resident wanders over and asks something in the middle of the count. The scrub looks him in the eye and continues to count louder. He doesn't interrupt again but continues to stand there sheepishly. When the count is finished, she turns full on to the resident, looks him hard in the eye, one hand on the instrument trolley and quietly but sternly says to him, 'please DON'T interrupt the count again'. (FN 3112-3120)

The four formal roles of the nurse in the ORS contribute to the functioning of the permanent team and, as can be seen in the last field note, the multidisciplinary team. They form and significant but artificial relationship within that team. Once the nurses move out of the formal roles that they must play to fulfil their professional responsibilities, they engage in a robust social relationship that adds strength and shape to the permanent team.

The social mode

The isolation of the ORS and its staff intensifies the relationships between the nurses. This is most clearly evident in the social mode. Unable, or at least unwilling to leave the ORS for break periods and mingle with people who are external to the area, the nurses spend every working minute in each other's company. In order to cope with this closeness they appear to engage cultural rules that determine the mode of relating to one another that is appropriate during a given activity. While the professional mode is evident when the nurses are accomplishing the work of the ORS, the social mode is most evident during quiet rest times. For example it occurs after lists are completed or when there are no operations booked. While the social mode is at times evident during an operation it is not always welcomed. A nurse who persists in playing a social rather than a professional role during the intraoperative period can disturb the flow of the operation because the responsibilities related to the professional role are not met in a timely manner. This is also true when the theatre is being reset, a time that the nurses try to keep to a minimum. The level of coordination required during this activity is such that the social mode would be out of place, as it tends to interrupt the nurses' concentration, disrupt the flow of activities and thus lengthen the change over time.

Not surprisingly the social mode is most evident in the tearoom between operations. Although this study is concerned with the operating room, it has been argued that the tearoom forms an important space and territory as an annex of the theatre[47]. It is here that the nurses can be themselves and act in a social manner with one another. The social mode provides respite for the nurses from their formal roles of the professional mode. It appears to fulfil two important purposes in the ORS. It enables the nurses to work together as a tight-knit and isolated community and it provides a space in which the nurses can seek and receive support and where they can offer support to one another.

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[47] Discussed in the 1st Layer.

Working together

The nurses work in a highly visible manner, constantly observing and being observed by each other. Consequently it is difficult for an individual nurse to conceal poor practice or a bad mood no matter how fleeting this might be. The level of observation that the nurses are subject to (and which they subject others to) is reflected in the following informal interview extract. Several of the nurses are discussing their observations of other nurses and the way they interact with a specific surgeon:

> You should see Julianne once he's really got to her, she doesn't get out of her bad mood all day, she really lets him have it. (I.I. FN5188-5190)

A high level of visibility has been related to the potential for ward nurses to become clinically isolated as they stop communicating with each other as a way of making themselves less visible (Street 1992). Not communicating in the ORS spells disaster for the unit and therefore the nurses cannot use this strategy to gain some private space. Instead they render their professional selves less visible by engaging in an intimate social relationship. In this way the individuals' personalities can be weighed against their clinical performance. For example a nurse who has not anticipated well in an operation will be judged more kindly if he or she has been up all night with sick children. This personal information would usually be divulged during social rather than professional interaction.

The social mode provides the nurses with the opportunity to emerge as people and engage with each other as friends. It is here that the first inkling of the nurses as a 'family' arises, a phenomenon which is discussed in detail in the 6th Layer. Within this mode the nurses relate to each other in a purely social manner. Discussion of clinical issues is not welcomed during social interactions. Instead conversation revolves around issues such as diet, health, family, personal problems and social events. In the following field note the nurses celebrate a colleague's birthday:

> Nothing is happening in the operating rooms. It is very quiet and all the nurses are congregating in the tearoom. They are relaxed and gossipy. One of the nurses relates her recent medical history and the whole group joins in with advice and teasing. The atmosphere is fun and jovial, very relaxed. It is one of the nurse's

birthdays and a cake has been brought in. When the nurse arrives the group burst into a raucous rendition of *Happy Birthday*. They all hoe into the cake discussing ages and who looks how old. (FN1462-1472)

Being able to assert themselves as social individuals and find respite from their professional roles appears to be an essential element of the ORS culture and one that is brought about through intimate social engagement. The social mode provides a safe space for the nurses to expose personal vulnerability and seek support from peers.

Support

Working in the intense environment of an enclosed theatre within the constraints of their professional roles can be very stressful for the nurses. This, together with the challenges of a complex operation and staff personalities can wear very thin and the nurses need to take time out in the social mode to regain their composure. The social mode and the tearoom provide the opportunity and space to speak freely and vent frustration. In this way the nurses are able to re-enter their professional roles and fulfil their responsibilities. The nurses acknowledge that they cannot continue indefinitely in the formal roles and that moving out of these roles is essential and expected. Rose captures this understanding:

> So I think, the staff in the unit support each other and know as a whole now, that if something like that happens, yes you do need a bit of time out, we're not machines that can just keep going, but we've got feelings as well. (Rose 990-995)

Because the need for 'time out' is a culturally accepted phenomenon, nurses are free to seek support promptly. By moving briefly from the professional mode to the social mode, potential confrontations in the operating room can be circumvented. Penny illustrates this:

> ... we have a lot of informal support, just going down and having a cup of tea and talking to your friends in the tearoom. I mean, that's 90% of the time, is all the support you need. To be able to talk things through we somebody else who understands what's going on or you feel that they understand what's going on. Just to release the inside tension of trying to bottle things up, you know I mean I think a cup of tea or just sitting in the change room crying on each other's shoulder or something just comforting each other and

193

supporting each when they've had a problem. That's accepted. (Penny 212-225)

Even the more formal social gatherings such as the journal club or the weekly ORS staff meeting can be used by the nurses to seek, receive and provide support. Within this enclosed environment an individual's problem can become an issue for everybody. Therefore, as this field note illustrates, the nurses all contribute to solving the problem:

> We use meetings for all sorts of things. We often use the journal club for all sorts of things like that, letting off steam but also some very good help points we need to think about come out of all of those even when we go out, nothing's worse than coming out with a group of theatre staff for an evening meal or something, because I mean, by jeepers, we go through the whole gamut. But that again is supporting each other and working things out between us so that if somebody's got a problem we can all maybe put our little bit in as to how we can overcome that problem. (Penny 262-276)

Penny's comment about attending an evening meal with theatre staff is also interesting because it alludes to the nurses' recognition their world is separated and different from the everyday world. The nurses appear to recognise that it takes an 'insider' to understand OR related problems. This intensifies the need to maintain a strong and intimate social relationship within the ORS to promote problem solving and teamwork. At a less personal level support is also given and gained through the teaching/learning mode, the third mode that exists amongst the nurses.

The teaching and learning mode

Within the ORS the importance of teaching and learning is taken very seriously. It is formally supported through the employment of an ORS-dedicated clinical educator, a structured orientation program, regular in-service sessions and a well attended journal club. All Level 2 nurses are provided with time, space and resources to update resource material for the ORS and all nurses can attend conferences for which support is available through the ORS and the hospital. In the ORS it is cultural expectation that every nurse will participate in teaching and learning. The focus of the majority of teaching and learning is the technical side of the OR nurses' role. The emphasis placed on either activity is largely dependent upon the level of experience of the individual nurse. For example a graduate nurse is more likely to have a learner

194

role and an experienced nurse is more likely to play a teaching role particularly in the area of his or her own specialty (see Illustration 3).

Illustration 3: Teaching and learning: learning through observation

The need to be both teacher and learner is driven, at least in part, by the variety of patients and their accompanying procedures. Anne illustrates this in terms of being a learner:

> Well, it's a learning process every time because you're seeing something different every time and a different aspect of, well I suppose you could say the anatomy but I don't quite mean it like that. It's a different aspect of a procedure I suppose and each time it is done it's never done exactly the same, or not in the area that I work in. There's always something different happening and I think that's what makes life here so fascinating. There's always something different. (Anne 816-826)

As Anne suggests, the constant challenge associated with variety attracts the nurses in the ORS and contributes to their sense of job-satisfaction. This coupled with the willingness to learn in a dynamic environment is also linked to gaining trust and respect amongst colleagues. Winnie suggests that this when she describes a theatre list that is attractive to the nurses:

> Something that's moving on with, seeing new things, using new
> equipment, learning new procedures, the surgeons are better
> teachers, those kinds of things and I think that that's what
> stimulates nurses and um and also when they're valued in terms of
> once they have the knowledge (Winnie 123-128)

It may take a considerable amount of time to gain that knowledge. According to Lee
the nurses tend to consider themselves as learners even if they have up to five years
experience in the ORS (Lee 169-176). This period can be extended when the nurse
moves into a new area. Even the most experienced nurses can become learners again
in this way.

Within the ORS many of the experienced nurses work in specialised areas. Here they
develop substantial levels of knowledge and skills that pertain to discrete areas of
surgery. This is partly as a result of the increasingly complex operations, the
proliferation of new procedures and the accompanying new technology that Barnard
& Gerber (1999) identify as stimuli for specialisation. Jill agrees with this. She
alludes to it when she discusses teaching and learning in the ORS:

> There is a lot of teaching and you never stop learning and even
> though I have been in theatre for so long, I'm actually rotating
> through another area apart from the one that I'm allocated to
> because I haven't done it for so long, I feel as though I have
> become rusty. The technology changes like the instruments change
> from year to year, so you might think you're on top of it and then
> turn you back and you've got a know a completely new set of
> instruments or they've got three new sets of instruments and a new
> surgeon and they do it differently (Jill 142-153)

Personal preference may also play a role in the nurses' choice of specialty area but
this can be limited by the modest size of the ORS and its commitment to
multiskilling. Whatever the reason for their preferences, the nurses become
recognised as the informal custodians of that specialty area. These nurses will have
particular lists in the specialty areas that they 'do'. These include areas such as
orthopaedics, ENT and urology. There is support within the culture for nurses who
are specialised in one area to experience other areas of surgery. In these instances an
experienced nurse will be teaching another experienced nurse.

The interchanges between teacher and learner when both are experienced nurses differ somewhat from when the learner is inexperienced. While instruction takes place there is still respect for experience. This may mean that where a beginner would be instructed to take a particular action the more experienced nurse learner has leeway to make decisions:

> The scout who has undertaken the operation before is instructing the scrub on what he will need to put out where and what can be stored away. He drops three mosquito forceps on the floor and says, 'I'll put these two off so that I can have a round number back' She looks questioning and suggests that he needs a lot but he restates his preference for putting off the set of 5 and getting a whole new set of 5. She acquiesces. (FN4172-4181)

There is always the potential for conflict over territory when an experienced nurse is playing the role of the learner. As a nurse who is used to having authority and control over a particular territory (for example, the instruments) it may be disturbing and frustrating to have another nurse, albeit one in a teaching role, entering that territory. The following field note illustrates how unsettling this can be:

> One of the scouts is the nurse who usually scrubs for this operation. She keeps moving the other scout out of the way and jabs her finger repeatedly at the trolley and some of the instruments on it. The scrub seems thrown by her actions. She does not set up smoothly and keeps looking at the scout for validation. The feeling is tense between them and the scrub looks irritated when the scout tells her what to do. (FN3937-3945)

In a similar incident an experienced learner explains why she has been flustered by the instruction of another nurse. She also appears to try and curb her irritation by reminding herself that it is reasonable and helpful for the other nurse to instruct:

> I haven't done this [operation] for a while and I just need to re-familiarise with it all and get organised by myself. I find when she [teaching nurse] interrupts I can't concentrate on what I'm doing. She's done it so many times, she knows it really well, which is good, and knows what is needed, which is good. (I.I. FN 839-846)

Conflict is less likely to arise when the learner is an inexperienced nurse. The beginner must not only accept instruction but will actively seek it. In the ORS, an area that is so different to other types of nursing, beginners are not well placed to decide what they can and cannot do. They must look to the more experienced nurses for guidance. For this reason it is within the teaching and learning mode that a

nurse's readiness to 'fly solo'[48] or undertake more complex procedures will be determined. It is within this mode that the nurse's suitability for the professional roles will be gauged and it is in this mode that the newer nurses will be supported by the experienced nurses to take up challenges that they may not feel capable of meeting. Lee recalls her graduate year:

> ... the RN's sort of can sort of figure out which operation you can scrub for and which you can't, as a graduate, and a few times we were short-staffed and I was in vascular rotation and there was one RN and myself and 2 Triple A's, (laughter) so I had to scrub, which was really daunting at the time but I had a lot of support and I loved it and I could do it and I guess they knew that I *could* do it. But it was sort of pushing me, a gentle push, lots of back-up if I needed it. (Lee 61-70)

Even a gentle push with a great deal of support can be very daunting for an inexperienced nurse. The nurse's ability and willingness to, as Winnie (386) puts it 'have a go' appears to be culturally essential however. To this end the nurses bring some pressure to bear on nurses who appear to be wavering:

> The learner is a bit hesitant, but the scout joins in and encourages her saying that it is an easy operation and that it is very similar to some she has done in another list so she will be able to work it out. It is apparent that it will be very difficult for the learner to refuse as both the nurses are keen for her to do it and are offering her a great deal of support. She agrees ... (FN4816-4823)

Penny, an experienced nurse, plays a teaching role more often than a learning role and must frequently make decisions about the readiness of learners to meet new challenges. She justifies the 'push' that learners may need and reflects on the perception that some beginners have of being thrown in the deep end:

> People think that they're thrown in at the deep end but until you're thrown into the deep end of a pool you don't know really whether you're going to be able to swim. It's all very well to swim in shallow water but until you get in and start to swim in the deep water you don't really know whether or not you can keep yourself afloat from here to there without being able to put your feet down ... you may not feel that you're quite ready, but until you actually do it you don't know whether you are or not, and the people surrounding you obviously feel that you are ready, so sometimes you just have to be given that little push. (Penny 362-393)

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[48] Act as a scrub nurse without another scrub nurse doubling up to assist, support and/or instruct (Winnie 365).

Through the teaching and learning mode and in conjunction with the professional and the social modes beginner nurses learn to work as part of the team. The professional roles define and shape their responsibilities, the teaching and learning role allows them to gain the skills and knowledge they need to fulfil the professional role and the social mode provides them with the support essential to cope with the accompanying challenges. Because of the importance of teamwork in the ORS, acceptance into the culture is partly based on a nurse's ability to be a team player and contribute successfully to the team enterprise (Barry 503-509; Lee 851-855; Penny 127-128). The remainder of this layer is devoted to the exploration and interpretation of the permanent team. The complex interrelationship between this and the multidisciplinary team is also addressed.

Teamwork and the permanent team

The frequency with which the nurses use the phrase 'we are a team' suggests that the team is culturally important in the ORS. The nurses perceive teamwork in an uncritically positive light. That teamwork is both beneficial and desirable is a taken-for-granted construct in the ORS. The description of teamwork as a cultural commonplace is supported by the literature. Both Cott (1998) and Bond (1998) note that the nurses accept the positive value of teamwork as axiomatic although its effectiveness has not been subjected to rigorous critique. The tacit cultural understanding of teams and teamwork prompted the following ethnographic questions:

- Who is the team?
- What is the nature of 'the team'?
- What is the nature of teamwork?

This last can be further divided into:

- How do the team and teamwork function?
- How can the team and teamwork be understood in the context of the ORS?

Definitions of 'team' suggest that it is a group or set of people working together (Mallik, Hall & Howard 1998)). Teamwork incorporates this definition and suggests that the purpose of teamwork is to achieve a common goal (Bond 1998). Effective

199

teams are characterised by cohesion; a common spirit; the ability to value the input of each individual; a shared philosophy; commonly agreed objectives and the commitment of each individual to actively contribute (Taylor & Campbell 1999c and Rushin, Thakrav, Taylor, Patel, Lochran, Palmer, Hunt & Armson 1998). Equality between team members, and collaboration rather than competition are also characteristic of teamwork (Bond 1998). The three types of modes that exist between the nurses contribute strongly to the formation of a robust team. As such they are implicit to the effectiveness of the teamwork in the ORS. The significance of teamwork to the ORS cannot be overstated. Teamwork is pivotal to way it and its individual theatres function. Anne concurs:

> They, the team, depend on each other for maximum performance. Most of us feel we are there (also) to help each other. We could not operate (work) without each other. (Anne, addendum to interview)

Rose expresses the positive impact that effective teamwork can have on the day's outcome and the satisfaction that can be derived from it:

> ... [the best thing] when you've got a team that just work really well together and at the end of the day you think 'gees that was a good day, everything went right, you finished on time, you got all tidying up done and there was none of these explosions [of bad temper] or anything like that, and everybody just worked really well together' and you felt you had a really good day. I think that's, obviously you know the patients are fine and all the rest of it, but for you, you felt really pleased with the way everything went and you just said, 'oh we had a really good day today' and that feels good because you know that all members of the team are pulling together, they're not pressuring one, and then you know, the surgeons are not jumping up before you're ready for them and it just works well, I think and everything comes together. It's self-satisfying because you're list has gone has it should go, you know there's no hassles with anything else. (Rose 1057-1075)

Lee considers the teamwork to be one of the major differences between ward and theatre nursing:

> ... getting back to the ward nurses you more or less work on your own. I mean, you are there with how ever many other nurses but you have your own patients and you set your own pace and you do it, do your routine. In theatre you can't work on your own, you've got to pull your weight and work as a team ... (Lee 865-872)

200

Barry concurs, suggesting that teamwork is one of the differences the graduate nurses notice when they rotate to the ORS from the wards. He believes that teamwork has a positive impact upon the graduate nurses who, he says, appreciate the way people support each other in theatre and everything is a team effort (Barry 505-509).

Within the ORS, two types of teams appear to coexist. The nature of the teamwork is profoundly affected by whichever team is working together at the time. The first team, the permanent team consists of nurses, and may include theatre orderlies, clerical and cleaning staff and clinical aids. The second team consists of the first team plus the medical staff and visiting allied health professionals. Within this thesis and because this is the nomenclature that the nurses use, this team is known as the multidisciplinary team. The coexistence of two teams is not unusual in health care. Cott (1998) for example, studied teamwork in a long-term care facility and found a similar co-existence of teams. She labelled the permanent team 'the nursing team' even though this team contained non-nursing as well as nursing members, and used the term 'multidisciplinary team' to describe the team that included transient members (such as visiting doctors). This layer is concerned with the permanent team, and the 6th Layer explores the nurses in relation to the multidisciplinary team. The ORS nurses are members of both teams and for them the overlap can be blurred:

> I see the team as multidisciplinary as surgeons, the registrars, the anaesthetists, nursing staff, the cleaners, the aides, that's how I see 'the team'. They work really well together at that, the personalities make such a difference, that they ah are pleasant to work with and you have a good rapport with them, then you really feel part of that team and that in itself is very satisfying. (Anne 149-162)

Robin, however, considers that the team consists mainly of nurses and cites the permanency of the permanent team and the transient medical team as the reason for his way of understanding the team (Robin 90-92). Robin identifies an important difference between the teams. The first team consists of people whose work lives are entirely committed to the successful functioning of the ORS and are intimately involved with every component of it. For example the coordination of the ORS and its theatres is almost completely the responsibility of the nurses in conjunction with the ward clerk. As already noted, the nurses liken the coordinating role to air traffic

201

control, with the nursing staff pedalling like mad to get everything ready for take-off. This is a stable team providing the steady and imperceptible substratum of the ORS. The permanent team's responsibilities are broad ranging and include supply and care of equipment, cleanliness and set up of the operating rooms and liaison between the ORS and outside areas. This is the team that makes the department work. They enable the multidisciplinary team to make their episodic appearances, meet their objectives and leave. That is, the multidisciplinary team is able to focus completely on a discrete perioperative procedure with no outside concerns to demand their attention. The relationship between the teams is depicted in Figure 8.

Figure 8: The permanent team and multidisciplinary team relationship
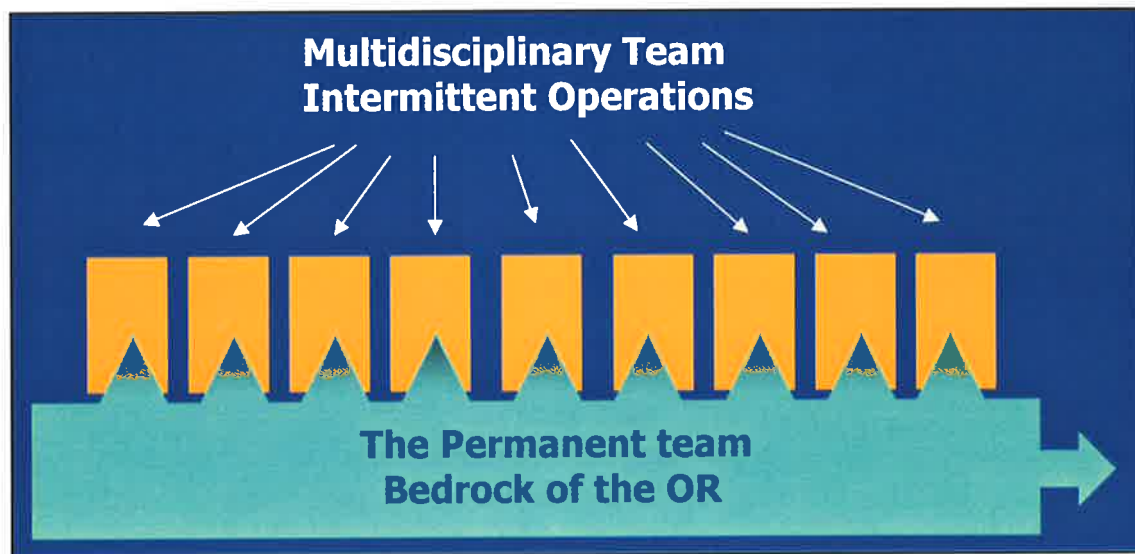
The division of teams is complicated and somewhat artificial because members of the permanent team are also members of the multidisciplinary team. The conflicting demands and expectations that may arise from this dual membership create a complex interpersonal environment. Both teams share the common goals concerned with safety of the patient and the successful execution of the operations but the permanent team has an additional organisational goal. The achievement of this goal, the efficient functioning of the ORS, is the foundation upon which the remaining goals can be achieved. The following field note illustrates the way in which the

permanent team anticipates the needs of the multidisciplinary team and work together to achieve them:

> 'We'll need the stirrups' the surgeon tells the tech, but they're already there. The technician and scout nurse put the stirrups in place but the scout is not able to get the stirrup into the position that the surgeon wants. Although she tries to manoeuvre the patient's leg she cannot lift it [it is too heavy]. The technician says, 'here, like this' and gently moves the leg into position. She thanks him and turns to see if the scrub wants anything. (FN 1712-1720)

As suggested by the previous field note the permanent team tends to be egalitarian. This is most evident After Hours when they negotiate the workload between themselves. It is a more relaxed time, a time in which the social mode is more likely to be visible and nurses move more freely between the professional roles. In the following example the nurses react negatively to a disruption in the normal egalitarian culture. A hierarchical structure has been enforced when usually there would be none:

> Two nurses are sitting having their tea. The evening is not busy and they are enjoying talking. The phone rings and one of them answers it. She nods speaks briefly and puts the phone down with a laugh. 'We've got four minutes left for our tea break'. The phone rings again and the other nurse answers it. She too nods and speaks tersely, 'yep, she mustn't have known I was here as well. I have four minutes left' They finish their food and drink in silence and then one stands up abruptly, 'well that's our four minutes up. We're have you been *put* tonight?' ' I don't know, I'm sure *she*'ll let me know' they roll their eyes at each other and then laugh. (FN 4566-4580)

Although sounding mutinous, the nurses in the previous field note both finished their break on time and returned to their designated duties. Although neither of them welcomed the interruption and the restrictions placed upon them by the nurse-in-charge, they both responded to her authority as coordinator of the ORS. The cultural expectation that nurses coordinate the ORS may in part have contributed to this response. This interpretation of their actions is supported by the nurses' response under the following different circumstances.

Dedicated to the ORS and committed to its performance as a whole, the permanent team consistently strive to ensure that everything runs smoothly for the members of

the multidisciplinary team and much of their activity is focused on this pursuit. Notwithstanding this, the members of the permanent team remain conscious of the 'visitor' status of some members of the multidisciplinary team and may place limits on them if they overstep the tacitly understood boundaries of the ORS. The following field note provides an excellent example of the permanent team's response to a doctor who tries to take on the nurse's coordination role. It is After Hours and the nurses and technician are having a tea break before the next operation:

> Over the intercom the registrar's voice pages 'scrub nurse to theatre 2, scrub nurse to theatre 2' and the nurses and technician fall about laughing. 'Get on the intercom and say *in your dreams*' the technician urges the nurses, and they all laugh some more. (FN4333-4338)

While the outcome of this field note was a long and lonely wait in an empty theatre for the registrar, it is an unusual one. It is unlikely that too many registrars would attempt to assert the tenuous authority they have in the ORS in this manner. Most have been acclimatised to the culture through engagement with the multidisciplinary team, a process that is developed in the next layer.

Closure of the 5th Layer

In the ORS the nurses have three modes in which they engage each other. The first of these is the professional mode in which the nurses act in the four formal roles of the OR nurse. These are the anaesthetic nurse, post-anaesthetic nurse, instrument nurse and circulating nurse. There is also a fifth role, reliever or floater, but this is an informally constituted role. The second mode is the social mode in which the nurses engage at a personal level and give and receive support that they require to fulfil the responsibilities of the formal roles. The final mode is that of teacher/learner relationship which allows the nurses to develop professional skills and knowledge. These too contribute to the nurse's ability to work effectively in the formal roles. Each of these modes contributes to the way in which the 'permanent team' performs. The permanent team is the second cardinal relationship affecting the nurses. It consists of the nurses and the staff members who are have dedicated employment in the ORS. Thus cleaners, clinical aids, theatre technicians and the ward clerk can all be included within this team. The permanent team forms the permanent substructure of the ORS. This team ensures that the ORS is able to meet its primary task of

hosting operations. Through their work, the permanent team enables the transient members of the multidisciplinary team (who include surgeons and anaesthetists) to perform safe surgical procedures.

The Sixth Layer: Operating Room Nurses and the Multidisciplinary Team

Opening story

The theatre is being readied for the next patient. Rubbish and soiled linen are bundled out of the room through the waste area, the soft inner bag of the suction containers are extracted, their contents checked, measured and disposed of. The aide has washed the floor and the scout nurse has cleaned the metal trolleys and theatre table, the Pat slide[49] is back in place. The anaesthetic nurse bustles in and quickly checks the anaesthetic trolley, tidying and replacing, checking and testing. Now the theatre is clean and the nurses put on their masks. The scrub nurse pushes his trolley load of blue packages through the door that the scout holds open for him. Not yet scrubbed, he rapidly distributes the packages onto various trolleys and bowl-stands and then heads out to the scrub sink. The scout nurse checks the A4 operation equipment list on the trolley and opens the outer layer of each blue package, exposing the sterile inner green. One package she opens completely to expose a towel and gown to which she adds a pair of gloves from under the trolley.

Hands held as in prayer, the scrub backs through the theatre door and, dripping water from his elbows, seizes a sterile towel, carefully and rapidly dries his hands and then gowns and gloves. As he puts on the gown, the scout nurse reaches under the shoulders of his gown and draws it over his shoulders, tying the gown down the back. The scrub wraps the sterile paper that contained the gloves around the remaining side-tie and passes the paper to the scout. As she holds he turns and wraps the rest of the gown around him, grabbing the tie as the scout releases it from the paper, the tie's sterility is preserved. Now that he is part of it, he can move into the sterile field and begin unwrapping and setting up instruments. The scout grabs the count sheet and stands ready to check the instruments off. Ranged on either side of the instrument trolley she and the scrub nurse count each group of instruments as they are unpacked from the tray and meticulously arranged on the trolley.

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[49] A hard plastic board used to assist transfer of patient between the trolley and table.

The face of the anaesthetic nurse appears through the window in the anaesthetic room door. She signals to let them know the patient is in and almost ready, then turns to assist the anaesthetist commence an IV[1]. She checks the patient's notes and x-rays, touches his shoulder and tells him that they won't be long now. The anaesthetist asks her for a medication and she prepares it for him.

The surgeon and registrar have come into the theatre and are not scrubbed. 'How're we doing?' the registrar is asking the scout. She says, 'we're ready when you are' and the patient is wheeled into the theatre by the theatre technician, anaesthetist and anaesthetic nurse. The surgeon, registrar and scout nurse all come to the table. 'One, two, three' and the whole team transfer the patient onto the table, except the scrub nurse who is the only scrubbed person at this stage. With his back towards the table he is both protecting and rechecking his equipment. 'Okay, come on' the consultant urges the registrar, and they go to scrub. The remaining team members are busy around the patient. Like a pit stop, the team apply the calf stimulators, blankets, pulse oximeter, ECG[50] leads. The anaesthetic nurse provides a running commentary to the patient, and sets out equipment to the anaesthetist who is busy preparing syringes and checking various readings. A sudden lull in the activity as a black mask is placed over the patient's face. 'Breath normally, relax, it'll be alright' the patient drifts off.

On cue, the theatre is galvanised into sudden action again. The anaesthetist and anaesthetic nurse work together to intubate the patient, the registrar and surgeon move into the theatre dripping water and the scout nurse stands by to help them gown. Talking with his registrar the surgeon holds out the side tie to the scrub nurse who without turning from his work, takes it and assists the surgeon in this last manoeuvre. Gowned and gloved the registrar takes the kidney tray of Betadine that the scrub nurse has ready and deftly washes down the operation site that has been exposed. The surgeon and registrar move together to receive a drape from the scrub nurse and the site is prepared. Drapes are transferred from a tray to the patient. Once covered the scrub nurse draws his remaining trolley and bowl close to the table, gives the sterile

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[50] Electrocardiogram

light handles to the surgeon to attach and places a blade in a small tray. He runs the leads of the diathermy down the length of the patient and throws the connection end off to the technician. He has brought the diathermy machine up close to the table and the scout nurse pushes the suction equipment close to this and catches the connecting end of the sterile suction tubing as the scrub tosses it off to her. She attaches the suction tubing to the overhead sockets, the technician switches on the operating lights which the surgeon pulls down, tilting them to focus on the operating site. The scrub holds the tray with the blade out to the surgeon. He takes it and the operation has begun.

Introduction to the third cardinal relationship

The relationship that exists between all disciplines in the ORS forms the third cardinal relationship within the culture. The relationship is described as that of the multidisciplinary team. Within this team each team member must contribute his or her own particular skill to the teamwork for the goals to be achieved. An amalgam of skill and knowledge from all the disciplines involved in the team is required to perform an operation successfully and safeguard the wellbeing of the patient. Precedence, however, is given to the skills and knowledge of the surgeon. Although the surgeons are part of the team, the nurses tend to separate them from other team members. While a number of reasons exist for this action and will be explored in this layer, it can reflect the nurses' perception of the principal importance of the surgeons' role during surgery. Much of the nurses' activity is centred on, and perpetuates, this understanding of the surgeon as the key figure in the theatre. This layer reflects the nurses' emphasis on the surgeon when discussing the multidisciplinary team. When asked what promotes good teamwork Lee replies:

> A lot of it depends on who the surgeon is and what the list is. If you've got a difficult surgeon it puts the pressure on the team, the nursing team. If the surgeon isn't difficult and relaxed and again he sort of respects you and almost sort of relies on you, that is a lot different, but if you've got a difficult surgeon who is making life difficult for everyone, the team does tend to fall down. (Lee 219-227)

Barry is also clear on the significant impact the surgeon can have on the way in which the team operates. He makes a clear distinction between the anaesthetic

208

medical staff and the surgical medical staff. This is an important distinction, especially when team-tension arises and powerful allies are needed:

> ...and so you don't want things to get held up, you want everything to go well for the patient and you don't want the surgeon to prang anything because he's distracted or in a shit or whatever, right, so, and you want to expedite everything. So we tend to go to extraordinary lengths to keep them happy so to speak ... it's interesting because, I'm sure you've noticed very clearly, that the style of the anaesthetist tends to be very different from the style of the surgeons and the anaesthetists tend to be much better team players and be members of the team than the surgeons do and so it tends to be the nurses and the anaesthetists all working, holding up the surgeon in a way. Or not holding them up, that's not the right word. We're going to do the things and we all make the conditions possible for them to get on with it, sort of thing. (Barry 434–526).

A significant amount of the nursing time and effort in theatre is spent working with the medical staff within the multidisciplinary team. A fair proportion of this time does not directly benefit the patient. It is spent accommodating and managing the doctors themselves. While it is true to say that much of this effort results in indirect patient care, some of it at least is a survival strategy, a way of keeping the peace and working towards 'a quiet life' as is evident in the following field note:

> There was an anaesthetist ...and everyone said, 'Don't mollycoddle this anaesthetist, don't be a handmaiden, we are professional nurses, we do this, we do that, we do this'. And another nurse would come along and say 'Well, I like to open all the syringes and have everything laid out'. And she said 'It might be pandering to them a bit, it might look like you are pandering to them, but if it puts them in a good mood for the rest of the day, then anything for a quiet life. (Jill 353-363)

Although the nurses discuss teamwork in an almost unequivocally positive light, the ways in which the teams work together impacts upon the effectiveness of team work. When the team works well together the teamwork tends to be rhythmical, calm and controlled. 'Team-peace' prevails. The team members often engage in 'team-play', working together in an open, sociable and egalitarian manner. The nurses work hard at all levels of their activities to maintain 'team-peace', but can also contribute to the establishment and escalation of tension within the team. When teams do not work well together, the teamwork tends to lack rhythm, the atmosphere is tense and a downward spiral in team spirit is often experienced (FN 564-588; 2175-2208; 2262-

2309; 4496-4557). There is little conversation shared between all members of the team and they will work in a hierarchical manner.

The team at peace

It is evident that effective teamwork promotes the coordination and success of an operation. Trust and admiration is expressed both overtly and covertly and the rhythm of the operation is tangible. Mutual respect and communication are indicative of a team that work well together as Rose indicates:

> I think respect from all members of the team is what keeps the team together. If you know that when you've got certain surgeons, certain anaesthetists and a couple of nurses who all work well together, the list goes really well, you all have fun, you can you know, make small talk and laugh and it's not the tense environment. But if you feel that you're not respected or if you don't respect another member of the team for whatever reason, it doesn't gel as well as it should. (Rose 116-126)

The nurses admire the surgeons' operating abilities but admiration of the surgeon is less common. Surgeons who are both admired and liked are described as good operators, caring towards patients and friendly and courteous towards the nurses:

> At the end of the operation the adult patient requires a 'nappy' to be put on. The anaesthetic nurse gets it but the consulting surgeon takes it from her and puts it on the patient. The scout is full of admiration, 'see that's what he's like. So gentle. He's really special'. He thanks the nurses for their work and they acknowledge him with smiles (masks are off at this point) and thanks. (FN 5573-5580)

Surgeons who recognises 'real-time' as opposed to 'surgeon-time'[51] and therefore acknowledge the work that must occur outside an actual operation are held in the highest regard, especially if they will participate in the permanent team's work. Rose notes this positive impact on the team saying:

> 'Some [surgeons] will stay and help you and help mop the floor and help move patients ... if you've got a big patient on the table it's a lot nicer if they come and help you take the patient off the table and they, little things like that, brings it together as a full team. (Rose 141-147)

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[51] Discussed in the 2nd Layer.

The nurses' appreciation of surgeons who participate in real-time activities colours the way in which they will respond to them at other times:

> The surgeon is called by his first name and the nurses engage in friendly banter and teasing with him. They ask questions freely and talk with him about social issues like family. The scout explains, 'oh he's great'. He's not like the others. He'll always help if you're short staffed. He'll grab a mop and mop the floor to help.' The registrar is also well liked. He is teased a lot by the nurses but does not tease them back. He submits good-naturedly to the teasing. The scout explains, 'oh yeah, Mark is okay, he's the one we really like, Geoff (the other registrar) is a pain, he's really up himself, but Mark is the better surgeon in reality'. (I.I.FN 5524-5536)

The previous field note also illustrates 'team-peace' in the form of benign teasing, humorous story telling and laughter. Of these three elements, mutual, benign teasing between the nurses and the medical staff is most indicative of team play. This type of teasing reflects the degree of comfort the team has with each other. There is no jockeying for position and the teasing reflects an egalitarian atmosphere. Importantly teasing is accompanied by the certainty that the operation is going as expected and so is not a source of tension. Teasing is not used in the same way as telling a joke in the theatre. Surprisingly it appears that the formal act of telling a joke is not necessarily indicative of team-peace. Jokes can be told within the more hierarchically structured teams and they may be used to exclude some team members and contribute to team-tension. The difference in these two forms of humorous interplay may lie in the focus of attention. Teasing draws attention to the person being teased. In the ORS it is used in an inclusive sense. On the other hand, joke telling in the ORS attracts all attention to the teller and can be to exclude people. Consequently benign teasing serves to include the person being teased and draws the team together. This is not the case with the joke. It does not always draw the team together, nor does it always seek to include, rather it can be used to emphasise status within the ORS as Barry's comment suggests:

> It's an interesting phenomenon this humour business in theatre which I noticed over the years always, and it hasn't actually changed that much over time, this hasn't. The surgeons like to tell a joke and everybody has to fall about appropriately, well sometimes they're very funny, but if the nurses want to tell a joke they have to make sure it's bloody good and they have to get the

timing right or otherwise it tends to be just ignored. (Barry 391-400)

Social talk regarding such things as family, health, children's' schools and weekend activities, and which is inclusive of all team members is also a strong indicator of team- peace. In many operations the conversation will be between the members of the discrete discipline groups. This may leave the scrub nurse isolated as he or she is caught in the intimate operating circle and is often the only non-medical member of that group. This situation does not indicate team-tension, but the inclusion of the scrub nurse and the non-scrubbed members of the team in the conversation is suggestive of a team who are comfortable working together.

Communication between team members both enhances and is enhanced by the existence of team peace. It promotes a friendly and relaxed relationship between staff with associated high regard and respect for each other. It can also support the wider concerns of the ORS as Rose illustrates:

> ... one registrar that I've worked with very closely in my speciality, he's wonderful, he'll come and say, 'look I, you know, the surgeon wants to book this, do you need to order in something?' ... we have a really good working relationship which, I just enjoy it because I know that I can go to him and say, 'look you can't bring this patient in today'. We're all looking at the work we're doing together rather than I'm going to do this and not giving you any information. (Rose 241-252)

The goodwill and sense of responsibility that the nurses feel for the medical staff is an important cultural substructure that supports effective teamwork and team-peace. If the medical staff recognise the potential level of support that the nurses are willing to give them, their time in theatre can be very pleasant indeed. Learning to seek and accept advice from the nurses is a key element of this. As Barry says, '...the intelligent registrars are sensitive to the fact that a lot of the senior nurses do a lot to teach them and can smooth their passage through the system' (Barry 1043-1045). Another RN noted that many of the less experienced doctors appreciated the nurses telling them 'little things' which meant that they would not do anything 'wrong' in front of the consultants (I.I. FN 5573-5580). Although the less experienced medical staff might accept nurses teaching them some 'little things' a more formal teaching

role is not so readily acceptable. Rose believes that it is important for the medical staff to be able to accept that there are times when nurses can act as teachers especially when the safety of the patient is at stake. She says:

> But if you get somebody who's not prepared to take that constructive criticism from the nurse, yeah it can be hard because you know that it's not right and you say, 'I think we should get the consultant in' and then they say, 'no I'm fine'. Because in effect your questioning their ability to do what they're doing and if they won't accept that question as constructive criticism and they see it as destructive criticism they might, they tend to jack up and say, 'no, I'm fine, I don't need him', but you know that he's struggling because it's taken 3 hours to take an appendix out and it shouldn't take that long. And it does happen and you say, 'look I think' 'oh no, I'm fine, I'm fine' but it's not fine to subject someone to 3 hours of unnecessary anaesthetic when it could be an hour.' (Rose 545-566)

Although Anne disagrees with Rose to some extent and considers that it is not her role to tell the medical staff if they are doing something wrong, she uses a subtler approach to teaching. She explains:

> Sometimes I'll say how the surgeon usually does his something like he might infiltrate with local before he does a procedure then I might mention that, but as far as the operation procedure I wouldn't comment, I don't think that's my role. (Anne 192-199)

Within the culture of the ORS and within the dynamics of teamwork, teaching is an area where change is apparent. The accepted teaching-learning dyad of doctor-nurse is changing (Snelgrove & Hughes 2000). A further discussion of this is presented in this layer in the section entitled 'Becoming a team member'. While the nurses appreciate and respect a doctor who is a good teacher, they also welcome doctors who recognise that nurses have something valuable to teach them. Sharing teaching and learning roles promotes team-peace and positive teamwork (FN 2013-2017). It strengthens interdisciplinary support. The following field note is a lighthearted illustration of the support that the nurses will give the well-liked medical staff. It incorporates elements of team-peace:

> The registrar who has just completed an operation and is waiting to help transfer the patient from the table to the bed looks up with a worried expression and asks, 'is [surgeon] coming in?'. The nurses and anaesthetist all laugh and tease him because he will need to make a quick escape to avoid being caught up with this particular

213

surgeon for what will be a lengthy period of time. A number of escape routes and strategies are suggested that range from the real to the fantastic. One of the nurses says, 'don't worry, we'll cover for you!' and, checking that the coast is clear, they hurriedly smuggle him out of the theatre. The registrar is home free before the surgeon arrives. (FN 1625-1636)

A further important dimension of the teamwork in the ORS is evident in this field note although in a minor form. The nurses know how the incoming surgeon will operate and that the registrar will be caught up for an extensive and uncomfortable period of time. They also know that the registrar will accept teasing and that the anaesthetist will collude with the group as a whole. The understanding the nurses have of the medical staff with whom they work contributes strongly to the effectiveness of teamwork in the ORS.

Knowing the medical staff

Understanding of the medical staff, their personalities and preferences are a significant part of the nurses' role in the ORS. It plays an important part in maintaining team-peace. While in the wards nurses 'handover' patients, in the ORS the nurses also 'handover' the medical staff. Information about who is in a good mood, a bad mood or had a hard night will be passed rapidly along the nurses' grapevine. Occasionally an informal but more structured handover will take place:

> A nurse who has been on leave for some time comes in to start work ... She asks what the new medical staff are like and there is a pause as the nurses consider. Then she receives a blow-by-blow account of the personalities and idiosyncrasies of all the new medical staff. The nurses express their opinion of the doctors freely and the emphasis is placed on the personality rather than the operating skill of the doctor. This receives only minor interest except for one with whom none of them are impressed at all. They inform her of some of the things they have to do. For example this one must be watched like a hawk, another won't listen but just keeps going. (FN 1476-1493)

The handover of medical staff appears to be linked to the desire for team-peace, or at least a desire to minimise tension within the team. Knowing the medical staff is fundamental to the ability to act at an optimal level. The ability to anticipate is evidence of this. The nurses' ability to anticipate what will be required during an operation is valued in the ORS. It is one of the important predictors of team-peace

and safety. The ability of the nurse to anticipate is predicated largely upon knowledge of the operation and knowledge of the surgeon. Experienced nurses who are familiar with both, are able to promote safety through skilled anticipation that incorporates the detection and accommodation of errors. Penny illustrates this:

> ... some surgeons of course expect you to have ESP too. And others expect you to give them what they actually want and not what they've asked for. Which always amazes the learners whenever, should have asked for a pair of scissors when you actually given them an artery forcep. They'll say why did you do that and he took it and you'll say, 'well yes that's what he actually wanted'. (Penny 584-593)

Given this, it is not surprising that one of the biggest contributing factors for team-peace is the experience of the nurses and the amount of time that the team has worked together. The more experienced and familiar the nurses are with both the operation and the surgeon, the more trust is developed and the more peaceful the team is likely to be. Winnie suggests why this is so:

> ... I think that in a way the surgeons rely on us I think that that's why when you get a nurse who's used to a surgeon and vice versa the whole theatre seems to run more smoothly because there's, there's a trust there, 'you know what I want, you know what I'm going to do, you're going to have all the gear there I'll want, you're going to understand how I'm working' and that's not just for the surgeon but the nurse as well. (Winnie 137-146)

Jill clearly illustrates how limited knowledge of a procedure can affect the ability of the nurse to anticipate, which in turn affects the flow of the operation:

> ... if the surgeon knows more than you do and you have no idea what you are doing you cannot anticipate so therefore the whole operation seems to be stop – start, stop – start, stop – start and now its, 'Now what do you want to use?' and there's no ... it makes the whole thing fairly stilted, you know, uneven, it doesn't run smoothly, you can't anticipate and you have to wait for the surgeon to ask for everything and then rummage round in the box of tricks to try and find it. (Jill 179-193)

A further consequence of poor anticipation is that the ability of team members to rely on one another is hampered, and trust, one of the essential elements of team work in the ORS, is potentially compromised.

215

Trust within the team

The nurses place a great deal of value on trust within a team. They work hard to be trustworthy and in return judge the medical staff's trustworthiness. A doctor who must be 'watched like a hawk' is clearly not trusted. This is not to say that he or she cannot gain the nurses' trust. For the residents and registrars being trusted indicates that they have been accepted into the culture of the ORS. In the case of new doctors, the nurses, according to Jill are interested in 'how much they know or are they confident … what their abilities are like, … whether they are nice people' (Jill 278-285). The nurses are more likely to trust a doctor who has good communication skills and can involve him or herself in the team as an equal. The ability to support and trust the nurses and to seek out and accept the nurses' opinions contributes to gaining trust. The nurses are more trusting of a doctor who can act as a good teacher (if they are senior) of who is a keen learner (if they are junior). Additionally, clinical proficiency coupled with a recognition of and respect for the experience and ability of the nurses contribute to the development of trust (FN 1563-1576; FN 1948-1949; FN 2122-2126; FN 2535-3536; Barry 405-406 & 726-730; Lee 387-388; Robin 295-297; Rose 545-566; Winnie 123-131).

Similarly the nurses must gain the trust of the medical staff. As they are already members of the ORS culture their acceptance into it is not predicated upon the doctors' trust however. The significance of gaining trust for the nurses lies within the effect it will have on the teamwork. If the nurses are trusted by the medical staff then the team is more likely to be effective than if the nurses are not trusted. As Barry says:

> Most surgeons really actually rely very heavily on having certain people around whom they can rely on, can trust if you want to use that word … but if there's nobody they know, you can sense it straight away, you've got a problem because they're going to be really edgy and they're going to be snotty right from the word go. (Barry 535-549)

Finding out whether a nurse is trustworthy or not can be, according to the nurses, an intimidating experience as Jill indicates:

> … a particular surgeon will come in and ask, 'have you got this, have you got that?' and you think, oh, I haven't got it and half the

time he doesn't want to use it anyway, he just wants to know if you know what you are doing and it's his way of saying, 'well do you know what you are doing or don't you?' He'll ask for all this gear and you'll run round and you'll sterilize this and you'll open packets and you'll find that you don't need them, there was no need to panic in the first place but he's got you where he wants you because he obviously knows more than you do and he knows that you don't know what you're doing and that's intimidating ... (Jill 202-217)

For nurses beginning in the ORS gaining trust is a process that can undermine their confidence and may lead to attrition from the area. In the following field note the registered nurse who is scrubbing is very new to the area:

> The inexperienced scrub nurse passes the first few instruments without hesitation. The surgeon stops and looks at her piercingly, 'what do I need next?' She looks at him with worried eyes and seems to shrink. 'I ...' she hesitates. 'What have I just done?' he snaps. She tells him. 'So what do I need next?' 'A suture?' 'Then give me one' She turns to her tray and hesitates, her hand hovering over the array of sutures she has 'Are you going to ask me what size I want?' She takes a deep breath and she looks hot and unhappy 'what size do you want?' she says in a small voice. Finally he gets the suture he wants. 'Fork[52]' he raps out looking away from her. 'Sorry?' she looks at him questioningly 'If you were listening last week you would know what a fork was' he says with contempt. She says nothing and stands and waits. Finally he sighs deeply, 'it's one of these' reaching across her and grabbing a standard instrument off her tray. 'You won't forget *now* will you. She says nothing and remains silent for the rest of the operation, pulling her body away from the surgeon who is working close to her. She is no longer engaged in the operation at all and the surgeon must ask her for all instruments now. Before the interchange she watched the site intently and had been anticipating the required instruments. (FN 2923-2953)

There are two important contextual elements of this field note that must be considered when interpreting its significance to the culture of the ORS. The first element is that the scout nurse, who was the senior nurse and had often worked with this surgeon did not act to support the junior nurse until after the operation was completed. The second element is that this surgeon was well liked and trusted by the majority of the nurses in the ORS. It is possible that the former element occurred as

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[52] The surgeon used a pet name for an instrument. It is not noted here as it would identify him.

the result of the latter. Alternatively, or additionally, it is possible that the time had come for the scrub nurse to 'prove herself' and pass that rite of passage which showed her ability to remain calm and organised under pressure. She herself was well liked by the other nurses, but had yet to gain their trust in this matter. Considered in this light it would appear that the effectiveness of the team is more important within the culture of the ORS than the comfort of an individual[53].

It may take a long time to gain the trust of a particular doctor. Barry remembers one surgeon he worked with saying 'It took him a long time to get used to, to trust you. I worked with him for about three years until one day he called me by my first name and I knew I was there (Barry 561-565). A cultural legend[54] related by several ORS nurses tells of a theatre nurse who was extremely irritated by the obstinate refusal of one surgeon to trust her considerable experience and ability. Waiting until the surgeon had picked his way painstakingly through her instrument tray and had satisfied himself that every instrument and piece of equipment was prepared to his exacting standards, she ceremoniously opened one last package and carefully placed a tiny kitchen sink into the centre of the tray. How it had survived the autoclave and what the surgeon's reaction was is not related with consistency, but the point of this legend is tacitly (and gleefully) understood.

The presence of an inexperienced nurse need not lead to tension within the team if they are well supported by the more experienced nurses. This is particularly noticeable when the surgeon displays idiosyncratic behaviour such as calling an instrument by a pet name and/or when complications occur during the operation. Penny relates a story from her past to demonstrate the importance of knowing the surgeon's idiosyncrasies. Her story clearly delineates the advanced abilities of the experienced nurse from those of the beginner nurse (in this case herself). Her very

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[53] Largely as a result of this incident the junior nurse decided to leave the ORS and is currently pursuing a nursing career in the wards.

[54] A traditional story especially one popularly accepted as historical (Australian Oxford Dictionary 1988).

218

recollection of this long-ago incident indicates how important both knowledge and support are for effective teamwork:

> ... the sister who was in charge of that theatre suddenly went away and started washing her hands and suddenly popped up beside me at the table in scrub and I sort of looked at her and thought, 'ah, now what's going on?' and at that time the surgeon had started singing *Lead kindly light amidst the encircling gloom* and I was trying to get these needles threaded as fast as I can, and it's very difficult to thread needles, very little needles with very fine threads and what have you, so she said you just keep passing them and I'll thread them. And at the end of the operation she said, 'as soon as he started singing *Lead kindly light amidst"* I knew that he was in trouble and therefore you needed help just to keep up, because the sutures were going to be even faster and faster and faster because the patient was bleeding, bleeding, bleeding' and I really had no idea what was going on, I sort of thought, 'oh we must be finished this soon' and what have you but I mean that was the support I got on that occasion without even asking for it, without actually even realising that I needed it, but I was never so pleased in all my life as to see her popping up suddenly scrubbed! But she did say, 'you didn't mind' I said, 'no no I could have kissed you', because I really felt that I was completely out of my depth, I had no idea what was going to happen, I hadn't seen many of these, and I certainly hadn't seen one that had gone wrong. (Penny 322-355)

One of the key features in the previous story is that the experienced nurse provided solid, non-judgmental support, taking control of the situation without damaging the confidence of the junior RN. In the following field note this same type of unobtrusive support has been orchestrated without the scrub nurse's knowledge. The scrub nurse has limited experience and is still 'doubling' with a more experienced nurse:

> The registrar who is operating comes in scrubbed and the scrub nurse double sidles up to him and mutters, 'Now be nice, she's new, so you just have to be patient'. The registrar nods and glances over at the scrub nurse who is resetting her instruments and does not see him ... She is very quiet and concentrating hard. The registrar is polite and patient and does not try to rush her. He makes humourous comments in an attempt to relax her. This is lost on her but the double scrub and scout nurses are aware and look at each other and him with approval. The scout hands over several other instruments not in the original set up but which have the same function as a number of instruments already available, but are of far superior quality. The registrar asks for an item and receives one of the new instruments. He expresses his surprise and

delight at getting one of these and the scrub nurse double and scout both laugh, 'that's what you get for being so nice to her' nodding towards the scrub nurse. (FN 4847-4885)

This field note while illustrating support also shows the ways in which nurses actively promote team-peace before and operation has started.

Promoting team-peace

Before the operation has started the nurses prepare not only the physical equipment and space for the operation but also the atmosphere of the theatre. They bring into play a number of strategies that will pitch the atmosphere at an optimum level and promote team-peace. They must then release control over the atmosphere as soon as the surgery has commenced. Once this has happened the surgeon will assume this control, meaning that the atmosphere in the theatre will depend upon his or her behaviour during the operation. The nurses appear to act as barometers, sense the pressure changes in the theatre and attempt to adjust the pressure to restore equilibrium. The nurses strive to promote team-peace and use a number of strategies to achieve it. It is not surprising that, given the critical role the surgeons play in creating the atmosphere, the strategies the nurses use are focused on and around the surgeons needs. Upon analysis these strategies would appear to be of two kinds; those which contribute to 'Keeping him happy' and those which contribute to 'There's no *I* in team work'.

'Keeping him happy'

'Keeping him happy' is a cultural phrase. That is, it is used with some variation, by many of the nurses. The *him* being referred to is the surgeon and the purpose of keeping him happy is a recognition by the nurses of the surgeon's key role in determining the atmosphere of the operating room (as discussed in this chapter). The following field note illustrates the way the phrase is used:

> The scout gathers the instruments rapidly and makes rapid-fire decisions about what she will and will not have. 'Oh and give me one of those' indicating a package, 'that'll keep him happy'. She turns to me and says, 'You've just got to make sure they're happy'. (FN 5130-5135)

By keeping the surgeon happy the nurses are able to maintain a calm atmosphere, promote the safety of the patient and preserve their own well being:

> ... so what we want to do is we want to get the operation sorted for the patient you know, the presumption is the patient really needs this operation, it's our position to make sure it goes as smoothly as possible and part of the going as smoothly as possible which means in brackets 'we shall do no harm' (the primary tenet of nursing) is keeping a surgeon happy and making sure that he's, you know that he's not distracted by being irritated by stuff not being their or presented in the right way or whatever. (Barry 475-486)

There are formal and informal ways of keeping the surgeon happy. An example of a formal strategy is the use of preference lists that itemise the surgeon's preferred equipment. Informal strategies are more covert and include such things as humouring, accommodating idiosyncrasies, maintaining silence, recognising a 'reasonable' outburst of temper, 'pedalling like mad' and ensuring 'preferred' nurses work with particular surgeons. Lee explains why the nurses act to keep the surgeons happy, her emphasis reflecting the importance of promoting team peace:

> I guess when you're just trying to just make life easier for everyone and yourself and they all do have their idiosyncrasies and then we all do, and if you can just, you know those, you can just make things easier for them and yourself, it is worth, sort of, doing it. I don't think it's pandering to them, I just think it just makes life easier for everybody else. And I guess they are entitled to have their favourite little things. (Lee 352-359).

Barry describes how the nurses go about maintaining peace even with a surgeon they consider to be 'difficult'. In the following extract he refers to the concerted effort the permanent team make to support the operation, their use of silence and the provision of the 'preferred' nurse for this surgeon. 'Dampening down the agro' alludes to the potential loss of team-peace and the nurses' role in maintaining it. The nurses' distinction between the ability of the surgeon and his character is also illustrated:

> ... there's one surgeon who's notorious among surgeons, he's such a miserable bastard, but there are very few people, we all have to work with him at one time or other because he does so much work after hours as well and there's only a couple of people, and there's one nurse in particular ... she tolerates all sorts of crap from him all the time and keeps her tongue. Every now and then she bites back a bit. But you know, and he does a lot of tricky work as well you know, and we not only go to extraordinary lengths to make sure absolutely everything's there to facilitate the process, but we

also have to dampen down the agro ... I mean everybody's just happy if he goes along pleasantly and he gets the hell out of it. (Barry 441-474)

One further interesting aspect of this field note is the notion of 'biting back'. It would appear that while 'preferred' nurses are preferred because they are experienced and knowledgeable, the ability to defend oneself is also admired. As one of the RNs, who was acting as a scout nurse stated during field observations, '...she (indicating the scrub) likes him (the surgeon) but she knows what she's doing and he's nice to her. Also she won't take anything from him' (FN 2786-2789). It is also evident from this that mutual regard may exist between surgeons and 'preferred' nurses although this is not always the case. In the next field note the surgeon is not well liked because of his tendency to become very angry very quickly:

> ... the nurses start to plan the next case. They are playing pass-the-parcel with the scrub position. No one wants to do it. Finally one of them says that she has to do anaesthetics because it will enable her to go to tea. Another grabs the scout role and says to the third nurse, 'he likes you, you scrub'. The third nurse sighs and looks appealingly at a fourth nurse. 'Don't look at me, he hates me, every time he sees me he gets angry' this nurse says. (FN 4415-4424)

The concerted amount of effort expended by the nursing staff to set and reset theatres is a way of maintaining team peace and is arguably part of 'keeping him happy'. The disparity that exists between real time and surgeon time is a major source of tension in the ORS. Extended change over periods can frustrate surgeons. Therefore, in order to reduce this tension and promote team-peace the nurses aim to ensure that changeover times are kept to minimum. They may extend themselves through break periods to do so. The issue of change-over times is further complicated by the invisibility to the medical staff, of the nurses' activities during this period a fact that frustrates the nurses as Rose illustrates:

> ... an interesting comment from a registrar not so long ago regarding a patient that had been in the theatre that had an infection and we wanted to close the theatre down, we wanted to rest the room and do the next case in another theatre, because of the infection, and his comment was, 'oh can't you just mop the floor' and I thought well what does he think we do between cases? We mop the floor we do all that, you know this is an airborne infection and he just thought well you obviously don't mop the floor why don't you just mop the floor this time. And he had no idea of all

these little things that happen after he left the suite. (Rose 708-721)

It can be seen that the nurses work together to promote team-peace. To be able to do this they must be able to take a dispassionate view of some of the behaviour they encounter. 'There's no *I* in teamwork' both supports the nurses in their endeavour and makes the cultural expectation clear to newcomers.

'There's no I in team work'

The phrase 'there's no *I* in teamwork' is drawn from an informal interview (FN I.I. 5590-5591). It reflects the paramount importance of the team and ability of the nurses to work as part of the team, rather than as individuals. The ability to stay calm, particularly under pressure, appears to be highly valued within the ORS. The nurses become adept at putting their personal feelings to one side and immersing themselves into the collective body of the team. This affords them some protection from tension and enables them to retain their composure. As Lee says, '…you just learn to shut off and just do what you do and it doesn't really hit you until afterwards. You can't afford to lose your cool' (Lee p.12-13). The following field note illustrates this:

> The surgeon snatches the syringe from the scrub nurse and squirts it himself. 'Look would you leave those [instruments] there!' he snaps at her and she looks calmly at him and arranges the instruments so that he can reach them himself. 'Put them in that!' he jabs his finger at a container of saline. She calmly explains that he asked her not to do that in the previous operation and he looks at her irritably and says, 'that's what it's for!' She calmly places the instruments in the container. She looks up at the scout and gives a mock long suffering look and the scout huffs a laugh. 'She's great isn't she' the scout comments. The anaesthetist and technician are in on the joke as well and there is a covert and rapid exchange of amused eye contact. (FN 4520-4534).

The most likely time that the nurses will need to 'shut off' is when one of the team members is acting in an unreasonable manner. The nurses differentiate between reasonable and unreasonable behaviour in the operating room and afford the surgeon greater tolerance for behaviour that might be seen as unreasonable in another team member. As Jill says 'Some doctors have good reason to explode' (Jill 413-414). Anne agrees and relates this to the level of pressure that the surgeon is under.

> ... if you're opening a face that's got a nerve exposed and um they need to get around the nerve without damaging the nerve, I mean you know it's tense for them and somebody comes in and they're making lots of noise, you can understand why the surgeon says, 'CAN I HAVE SOME QUIET IN HERE' loudly rather than shouting, you can understand that it's not directed at them or you it's just a tense part of the procedure. (Anne 333-342)

Although the nurses can accept that at times the surgeon's anger may be reasonable, the tacit expectation that it will be tolerated because the surgeons are in a privileged position is not lost on them. Indeed this can cause resentment because it draws the nurses' attention away from the patient and serves as a constant reminder of the exclusive nature of the medical team. As an RN explained:

> Look you've got to understand where they're coming from. If I had my knife stuck into someone's belly I'd be tense. When a surgeon is in the middle of an operation and the patient's not doing to well, well I'd yell too to let off some tension. That's okay. But you also have to see that they are a really privileged group of people and they're used to getting their own way... At the end of the day, we're not here for them; we're here for the patient. (I.I. FN 2218-2231)

Being in a bad mood is not considered to be unreasonable although it can make the day more tense. By detecting that a surgeon is in a bad mood the nurses can put strategies from the 'keeping him happy' repertoire into play. Far more worrying and destructive is unreasonable behaviour. Because of the key role they play in the theatre, unreasonable behaviour on the part of the surgeon is the most destructive to team-peace. It is here that tension within the team can arise.

Team-tension

While the nurses strive to maintain their cool and not take things personally, there are times when the surgeon moves beyond what the nurses are prepared to accept as reasonable behaviour. Unreasonable behaviour tends to be characterised by an open or sustained attack on an individual nurse for little or no provocation. Anne considers that negative behaviour that becomes personalised is unreasonable (Anne 351-2). Lee is very clear on what she considers to be unreasonable behaviour:

> ... I don't think it's okay to be sworn at and that often happens and once upon a time when I used to ignore it I just now say, you know, 'Oh, there's no need to speak to me like that'. Throwing

instruments is definitely not on. Being told when you're scrubbing for a case that you didn't check the instrument right, 'If this child dies, it will be your fault sister'. I've been told this before. (Lee 261-269)

The nurses use a number of strategies to cope with, prevent or stop angry outbusts. Jill believes that the best way of preventing anger is to communicate any problem as soon as possible, admit fault if it is hers and offer alternative solutions:

> So, if there is a problem, something that I have done, I will always try and warn them, you know, 'we haven't got this today, I can't find this, you know, can we do something else?' Or that type of thing. There could be a multitude of reasons why they are not happy, but you just have to sort of try and keep your end of the bargain and hope that you are not the reason that they are cross, but you know, nurses do do things. They might drop things or they might forget to send for a patient or forget to send for instruments or something from another hospital or not have the right prostheses there. But we try not to. (Jill 430-443)

It has already been argued that being able to stay calm under pressure is highly valued in theatre, but Penny reflects with humour:

> ... tears actually can be very helpful at times. You can find that the most irate surgeon, I mean we had a, a, actually this was an anaesthetist, we had a, oh no it was a surgeon as well, they both worked together, and I remember one or other of them in the end that he got really so wild that I ended up in tears once, stamping my foot and screaming obscenities and they just absolutely crumbled. They took me out and gave me a cup of tea and patted my hand, apologised all over the place. And really, I was that bloody wild, God, yeah, hmmm. (Penny 616-631)

Lee however does not think that tears are helpful and relates a story in which to preserve the patient's safety she shut herself down to be able to stay in the room she was scrubbing in:

> A two year old had inhaled a peanut and the surgeon said to me, 'Check that the forceps go down the bronchoscope and open', which it did. When the patient was anaesthetised he put the forceps down the bronchoscope and said 'There is not enough clearance here' and I said, 'you asked me to check that they opened – they opened'. He said, 'They need an inch clearance and then they need to open'. And I said, 'Well, you didn't tell me that'. And he did, he screamed at me the whole case, 'If this child dies sister, it will be your fault'. The registrar was trying to pacify him, 'Oh, it's all right, they open, it's OK. My scout in the end called

our CNC[55] around. I said to her, 'get you know, get blah – blah'. And she came around and then she called for other people to come and called for other people and longer forceps were found and I had a lot of support but I hated scrubbing for that surgeon. It took me a couple of years to face up to him again. But I was very tempted to cry and leave but it was a two-year-old child so I ignored it and just shut him out and didn't even respond to him and got on with what I was doing unless I fell in a screaming heap. (Lee 275-306)[56].

Rose too suggests that it is not appropriate for nurses to respond in an angry or hurt way in the theatre. She says, 'I can put up with the rantings and the ravings and go away and call them a stupid this or a stupid that and rant and rave just as much as them' (Rose 886-888).

An outstanding issue with these strategies is that only one appears to be assertive. The nurses seem to be concerned that by expressing anger themselves, they will place the patient or themselves at risk. It is also possible that as with advocating[57] the nurses may perceive themselves to be in jeopardy, risking professional reprimand, or as Barry puts it 'a giant smack from above' (Barry 342) and that they feel themselves to be still caught up in the residue of a traditional hierarchical system in which they are subordinate to the medical officers. Perhaps it is because of this that occasionally individual nurses do not deal well with the pressure and are damaged by it.

The fragile I

Contrary to the cultural maxim 'there's no *I* in teamwork' there are occasions when unreasonable behaviour is taken personally and individuals get hurt. In this instance the individual may choose to leave the theatre for the operation, the list or permanently:

> Someone had worked with this surgeon for years and years elsewhere. He was just whinging and, 'Come on quick, get this, get that', which was very unlike him and she just burst into tears and said, 'I'm leaving' and left. You know, some people say you stay no matter what but I think if you can't think and you're just

[55] Clinical Nurse Consultant.

[56] The child survived unharmed.

[57] Discussed in the 4th Layer.

getting yourself in more of a tiz and make more mistakes, well get out of there…she stayed until someone had scrubbed in at the table and then left. Again, you have to think of the patient. If you are a mess and can't do anything, then you're better off out of it. It is difficult but you do learn to just shut it out and just focus on what you're doing. (Lee 337-355)

Another way of responding to the emergence of the fragile *I* is to engage the permanent team in a collective action that provides additional support and active protection to the vulnerable individual. Penny explains:

And then you've got, for example, a nurse being hounded by a surgeon. That needs her nursing colleagues' support to stop…for example a surgeon, it's usually the surgeon, can be the anaesthetists, can actually be one of your colleagues, um is really getting hoed into someone and they need support, so you call any RN's, any of their colleagues who are free, goes and a just stands there silently in a circle around that person and the person who's abusing them, and it's surprising how quickly the person who's abusing stops and realises that this is not acceptable behaviour. (Penny 129-153)

This last strategy introduces the concept of 'the family' as a significant cultural alliance in the ORS. The family consists of the nurses and may include the technicians. While to some extent it reflects the 'permanent team' the alliance's purpose is to protect and support its members, rather than to promote the organisational functioning of the ORS. Lee first introduced the idea of the family as a particular cultural alliance. When reflecting on the support she received from the nurses in early stages of her theatre career she stated, 'it was very much like a protective family' (Lee 40-41).

Another purpose for the family appears to be establishing a legitimate position for nursing as a significant professional group in the ORS. As it has been argued, at times the work of the nurses is invisible. The nurses must occasionally assert their needs in the ORS and the family provides the support to do this. Rose alludes to this when she states:

Often I think there's this, it's forgotten that they say, we're a teaching hospital. But they see that as a medical teaching hospital rather than a nursing teaching hospital and we've gotta teach our nurses just as much as they have to teach their medical students if you want the overall theatre to, to run well. But also looking at the

future you know, we've got to train nurses up to do the role and often there's this, oh, when you've got you know consultants, registrars, everything, 2 medical students and a scrub, there's this, 'oh but we're a teaching hospital', I say, 'well we're a teaching hospital too so give us a few minutes to teach our nurses'. (Rose 179-192)

Similarly, when Barry uses the phrase 'our own' when alluding to teaching inexperienced nurses in the OR, he incorporates them into the family, and clearly differentiates the nurses from 'them', the inexperienced medical staff (Barry 167-8).

In turn the nurses use the family alliance when they wish to exclude the surgical staff completely. This is a very unusual occurrence for even during tea breaks and intimate social chatter, the surgical team will be included, albeit grudgingly at times. While working hard for team-peace the nurses recognise that at times they must look after themselves first. Lee notes:

> I guess we all look out for one another, the nursing staff. Although there isn't the doctors versus nurses, sometimes it does get to that point and the nurses do rally round and protect one another. (Lee 247-251)

When it does get to 'that point' team-tension comes into play. It is characterised by a break down in team-peace, an absence of team-play, an increase in unreasonable behaviour and the splitting of the multidisciplinary team into two opposing groups. The separation of the nurses and surgical staff into two hostile camps is a clear indication that team-peace is no longer salvageable. The family must now confront 'the club'. The club consists of the medical staff and loosely includes the medical students. One RN described it thus:

> It's a club, a boy's club and they all try to be part of it. They look after each other and they have a lot of privileges. They can be really nice to you but when the chips are down they stick together. (FN 2226-2229)

The anaesthetist holds an interesting position during these splits and may act as a mediator, a member of the club, a neutral party or an ally for the family (FN 2783-

84; 2817-2819; 4038; 4532-4; Barry 269-272; Rose 380-383)[58]. The following field note illustrates the nurses' recognition of the anaesthetist as an ally. A nurse has just made a gesture as if to strangle the surgeon:

> The anaesthetist is aware of this exchange[59] and is amused by it. He is pretty relaxed. A law unto himself, he is well liked and respected by the nurses. 'Oh yeah, Steve's a good guy. He's good value. He knows all the little games that they [nodding to the surgeons] play and he's on our side. If there's trouble he always comes in to bat for us'. (FN 2116-2126)

Team-tension is not only caused by the medical staff. The nurses also participate in its creation.

The nurses' contribution to team-tension

The nurses make a significant contribution to team-tension. Some of the surgeons are in the unfortunate position of being permanently and negatively labeled. As a consequence the nurses will usually have preconceived ideas about the way in which the list will go and any act on the surgeon's part that is in the slightest bit disrespectful risks being blown out of proportion. The following example involves a surgeon whom many of the nurses find hard to get on with:

> The lights are well down behind the surgeon to shine straight into the operation site. The scrub nurse is behind the lights and is separated from the operation by a greater distance than usual. She must duck under the lights to give the surgeon anything. She is coming back under the lights and misjudges the height. She knocks her head hard and gasps out loud. She looks like she is in pain and moves her hand to touch her head where she has hit. She cannot touch it or she will need to change gloves but holds her hand away from the site. Everyone in the room expresses concern except the surgeon who turns around and looks at her briefly and says, 'you moved the light'. The nurses look at him and laugh in disbelief but he really appears to be oblivious to what has happened. (FN 2097-2113)

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[58] This last option reflects the role of the anaesthetist as an ally in advocacy discussed in the fourth layer.

[59] The scrub nurse and surgeon have just participated in a tense game of one-upmanship (FN 2097-2116).

While it was hard to judge whether or not the surgeon had noticed that the nurse had hurt herself, he was not given the benefit of the doubt. It fitted the nurses' perception of his character and their anticipated outcome of this list, to accept that he did know and did not care. The confusion between what is deliberate provocation is further exacerbated when the nurses and 'disliked' surgeons enter into a game of one-upmanship:

> The lights have been moved and as the surgeon stands up he bangs his head on the light handle, which is sterile. He reaches up and touches the handle to readjust the light and the scrub says, 'I'll get you to change gloves because you touched the light' 'No I didn't!' the surgeon is emphatic, although it is clear from the looks everyone is exchanging that they have all noticed it. She says, 'Oh. Okay then' her tone is sceptical. Within the next couple of minutes however the registrar bends too close to the surgeon and brushes his mask against the surgeon's glove. The scrub draws herself up and seems to gather her strength, speaking loudly and emphatically, 'Okay that's it! His mask touched your glove and you are going to change gloves'. She is quite agitated and turns to the scout requesting new gloves. She does not wait for the surgeon to answer her but grabs the gloves and holds one ready for him. He argues with her saying that his head is touching the instrument that his hand is holding and therefore it is not sterile anyway. He agrees to change gloves after he has finished with that instrument. She gives him a dubious look and reluctantly agrees but as soon as he puts the instrument down she holds the glove out again. It is abundantly clear that he will not receive any more instruments from her until he has changed gloves. But he does not put his hand in the proffered glove. Instead he dangles his hands and arms until his hands are completely covered by the gown sleeves. She looks at him doing this and heaves a sigh, turns with exaggerated patience to her trolley and recuffs the glove she had ready, leaving it in an easily accessible place for him. But he wants the other glove first and moves into her space to reach past her, which forces her to lean back then step away to prevent being contaminated. Her face assumes a tense, switched off look while he calmly returns to his stool. (FN 2262-2307)

This field note illustrates the complexity of the causes of team-tension. In the first instance the nurse draws upon the authority of the rules of the ORS and is overridden by the surgeon's personal authority. It is noteworthy that at this stage he is wrong and the entire team know that he is wrong. When the sterile field is breached for the second time the nurse once again draws on the authority of rules and the residue of anxiety from her first attempt amplifies her effort. She does not take into account

what the surgeon is doing at the time and once again he argues with her and wins. While she uses the rules to protect herself and in knowing that she is 'doing the right thing' can feel self-righteous, she is unable to control him. They have entered into a game of one-upmanship. As a last resort she attempts to control him by preventing access to the instruments. He forces her to move by threatening to contaminate her, using the rules in his favour. When she realises that she cannot win she disengages from the situation thus protecting herself. The situation went thus from a risk minimisation problem to a personal attack on both sides. Both the nurse and surgeon in this instance contributed to the creation of team-tension.

It is clear that communication between the team members plays a critical role in the way in which the team functions. The point has already been made that at times a member of the team will assume that the nurses know what is wanted. In these instances if the nurse is familiar with the operation, anticipating what is required is possible. This however is not the case with unfamiliar operations and/or inexperienced staff. The following field note illustrates how a lack of communication can disrupt the rhythm of an operation. Elements of the family and club are already evident suggesting that the teamwork was already poised for an irreversible deterioration:

> The implant needs to be filled with water and no bubbles can be in it. The surgeon is demonstrating how to do this and the scrub nurse is watching him carefully. He is demonstrating partly so that she can do the next one and save him a great deal of time. But his comments are directed to his medical audience. The scrub nurse is trying to be included, looking interested and nodding as he speaks but he is curt with her. She takes the piece and puts water in it and for a minute it looks like she is going to do it first pop. The nurses all look hopeful but it is as tricky as it looks and she works for a while on it. Finally she has the balloon full of water and she is jubilant, beaming triumphantly at the nurses. She takes it over to the surgeon. He glances at it and asks flatly, 'Are there 10mls in it?' and turns away. He had not mentioned the amount that needed to be in the balloon and so she had not measured it. She looks at the balloon, then at the nurses, rolls her eyes, squeezes the balloon, casts a sidelong glance at the nurses and says mutinously, 'looks like 10mls to me!' But it has to be redone and she patiently and successfully refills the balloon checking the required volume with the surgeon. (FN 2235-2260)

Once the teamwork during an operation, or perhaps an entire list, has begun an irreversible downward spiral, the nurses withdraw into the family, and do not attempt to resurrect the situation. It is at these times that the tearoom assumes its most important function. It is a safe space to freely express anger and frustration. While the nurses strive to maintain their composure during operations, they rely on the safety of the tearoom to express their more hostile feelings freely. During these times, the tearoom becomes an important nursing territory, one that will enable the nurses to regain their equanimity and re-enter the operating room with the level of calmness required to fully contribute to the team. Rose adds that the predominance of females in the field may impact upon this behaviour:

> ... maybe it's a male female thing as well, that females (nurses) tend to maybe pent up their emotions a little bit until later on and then explode in the company of her peers, and you all have a cup of tea and say, 'look don't worry, he's just a dickhead' or something like that. (Rose 1029-1034)

The nurses' activities make a strong contribution to the effectiveness of the teamwork. A further dimension exists however in relation to establishing and maintaining good teamwork in the ORS. People who are new to the ORS must learn to become team members.

Becoming a team member

Learning to be a team member is another important contributing factor related to the way in which the team functions. While the nurses are permanent members of the ORS and follow the formal and informal structures that induct them into both the nursing and multidisciplinary team[60], they are intimately involved in the induction of the visiting members of staff, most notably the medical staff, into the multidisciplinary team. Although other categories of staff visit the theatres, for example radiographers, they enter the theatre on a different basis to the medical staff. They are truly transient, usually present for only one operation and are treated as visitors. The medical staff, who have a pivotal role in the ORS, are not visitors and even the medical students undergo some induction into the ORS culture. The process of becoming a team member appears to have four distinct elements. These are

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[60] Discussed in the 5th Layer.

learning what it means to be a team member in the ORS; learning one's place in the team; learning everyone else's place in the team and finally, making a strong contribution to the teamwork.

Learning to be a member of the team is the first element that has to be learned and is part of the induction into this culture. Rose describes this process:

> Like first year residents, okay suddenly they've come from university where they've been bombarded with all this information … but they're not taught the group dynamics of working in a large establishment but, yes they might be a wonderful diagnostician … but they've got to be also able to communicate with ancillary health care workers and nurses who are all doing everything together. But they're not the one person responsible for the care of the patient regardless of what they've been doing … So you've got to, not I suppose you'd say mold, but just awaken them to the fact that they've got to rely on other people and they can't do it all themselves and they have to learn to rely on other people to do it, and to help them with the role. Because we're all working, hopefully working together to do, get the same outcome … so anyone new, you're awakening them I suppose to the truth behind being the doctor, the surgeon the whatever … there's all these little things that need to come in to make that procedure happen that you didn't learn at university so in that respect you're teaching them that, that the, the people aspect besides the, the patient being a person. The colleague aspect of it and how you've got to be prepared to respect criticism from colleagues, rely on other colleagues to do things and colleagues is not just medical colleagues, it's nursing colleagues, it's ancillary staff, it's cleaners, it's everybody that runs, makes the group happen … so, you've got to sort of, mold them and train them or whatever to the fact that they're not just the doctor but they've got to know what's going on. (Rose 660-708)

Recognising the need to be a team member is only one step towards acceptance. Learning one's place on the team is also important and teaching this is not confined to the nurses. Other members of the multidisciplinary team will also contribute, supporting their colleagues while sending a clear message to the offending party. In this extract, a new registrar is constantly issuing orders to a very experienced nurse and the surgeon intervenes:

> 'He said, 'stop telling the nurse what to do, she's done more of these operations than you've had hot dinners', that type of thing,

and he put the registrar back in his place and we got on fine after that'. (Jill 271-276)

The notion of 'molding' is an interesting one. There is little doubt that the nurses have clear views on what constitutes culturally acceptable behaviour from the medical staff. These behaviours are strongly related to team membership and the nurses use a number of strategies to shape new staff accordingly. The more experienced medical staff may also be complicit in this process as the previous interview extract and following story drawn from the field notes illustrates:

> The anaesthetic nurse leans down to the patient, holding the charts against her chest. She introduces everyone to him and finishes up saying, 'this is Bob, he's the anaesthetist' 'yes but she's the boss' says the anaesthetist and grins at her. She laughs and continues to talk with the patient who smiles and nods at them both. He looks worried however and she asks him if he has come in that day. He tells her that he has been up since 4am and she expresses surprise and sympathy. She puts his charts and Xrays onto the far side edge of his bed against the side rail and comments about the number of Xrays he has. The anaesthetist also comments and the patient looks very pleased with himself. 'Yes I reckon you could write a book with those' he says to everyone at large, and they smile at him but move on with the various tasks they are completing. The brand new resident comes bouncing over and grabs the patient's arm and says, 'I'm just going to stick you mate' the RN shoots him a surprised look, but he is intent and appears pumped up and nervously excited. She moves to his side to assist him as he hopefully taps away at the patient's wrist and back of hand. She hovers with the cannula ready and waits patiently for the RMO to choose the site. Making eye contact, she asks the patient, 'Are you okay with needles?' 'Oh yeah, they're fine' he says smiling at her. She glances at the RMO who is anxiously prodding a promising looking vein and hands him the cannula, prompting him with a reassuring smile and nod. He gets the cannula in first time and looks very pleased with himself. She moves the IV line nearer to the cannula ready to plug it in. He withdraws the trochar with a flourish and suddenly there is blood everywhere. He's not wearing gloves and stares frozen in horror at the blood coursing from the cannula 'Um..ah,ah um!!?' he looks at the nurse who is wearing gloves. She calmly says, 'Oh dear!' occludes the vein and the blood stops. 'Yes, you need to hold it here and that won't happen. Look! [indicating the cannula] These are quite tricky but if you do this [manipulating it] it works.' She looks up and smiles encouragingly at him. He nods happily and with some relief evident. He holds the trochar up for her to see and asks, 'Does this go in the sharps?' 'Yes, but if you were caught without one for

234

some reasons, they're encased [she indicates the encased trochar] so you could use something else if you had to'. She hands him the IV line and he inserts it and is holding the line and cannula precariously in position. 'Can I have something for this?' he asks her. 'Just wait! She's got it' the anaesthetist admonishes him, and then catches the nurse's eye – they both look amused. (FN 1797-1849)

In this story it can be seen that the anaesthetic nurse and anaesthetist provide explicit and implicit cues to guide the new medical officer. The explicit teaching of a technical skill is accompanied by a subtler cuing. For example the nurse cues the RMO to ask the patient if needles affect him. When he is unsure of what to do about the blood her underlying message appears to be that people making mistakes will gain support if they ask for help. In addition the anaesthetist, in correcting the RMO, encourages him to trust the nurse's abilities and to observe her activities more closely. In this field note the RMO is well liked by all the multidisciplinary team and while he makes a number of elementary clinical mistakes in his eagerness to learn, it is this very eagerness to learn that endears him to the nurses in particular. As Barry explains:

> It becomes a question of the ones (medical staff) who know that they don't know and know when they don't know and know to say, 'I don't know', it becomes that sort of approach, which is the same for how we treat our own as we treat them. The ones that we, the ones that get nurtured best in theatre are the ones who become obviously, they know when they don't know and they say so, or when they feel they are getting out of their depth and they say so. The ones we're always worried about are the people who think they know and really don't know. (Barry 1063-1076)

Rose agrees with Barry, underlining the importance of inexperienced medical staff to be open to nurses teaching them:

> But also, our teaching can go the other way[61] depending on the ability of the medical student and the resident/registrar, whether they are responsive to the fact that a registered nurse is trying to teach them something. Some of them are really good and I've had some really good registrars as well, that ask you lots of questions and all the rest of it, and what do I have to do if I need to book this case, is it something that I need specialty equipment for, they

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[61] Rose had been discussing the surgeon's willingness to teach nurses about the anatomy and surgical procedures.

always come to you. Others won't. There's some that have this, not superiority, but again this um, 'you shouldn't be telling me what to do, I'm a doctor'. Which we're trying, trying to break, because that's not the attitude, that's the attitude we hopefully got rid of 10 years ago, but there are still some, registrars probably more than residents, think that they, you can't have anything to teach them because you're theatre nurses and not doctors, sort of thing. (Rose 219-238)

She makes the point that, while on the wane, there remain a small number of medical staff members who do not welcome being taught by nurses because of a perceived status imbalance. These doctors are not well received in the ORS and the nurses use alternative strategies to mold them or as Rose puts it '… break the attitude' implying that more forceful strategies must be used. In fact the strategies increase in subtlety but to devastating effect, acting to exclude the person from the team. The following field note illustrates how the nurses isolate and punish an unpopular RMO:

> The resident is finally dressed and the scrub nurse nods to where he should stand. She reminds him to watch his back so that he does not contaminate anything. She does this as on off side as she passes instruments to the surgeon. Her shoulder is turned in and he is excluded from the operating circle. He is not included in the operation and has a purely observing role and is ignored for the rest of the operation by the nurses. They do not undo him at the end of the operation and he has to ask to be undone. Both the other surgeons are undone by the scout[62]. (FN 5548-5560)

Game playing is also one of the strategies use by the nurses to destabilise inexperienced medical staff whom they perceive as arrogant. The games, which appear puerile and mean spirited, are used as a last resort and reflect the sense of frustration and suppressed anger the nurses feel. Once again the nurses demonstrate a lack of assertiveness and their actions are quite aggressive. Jill provides the following examples of games that may be played on particularly arrogant but inexperienced doctors:

> You might say, he might ask for a suture that is not on the surgeon's preference card because when the registrars first come they have to use the equipment and sutures that their surgeon uses, so you might say, 'I'm sorry that's not on the surgeon's card', or you know, if there's a waterproof gown and a cloth gown, you save the waterproof gown for the surgeon and they have to have a

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[62] This is a significant ritual that is symbolic of team membership and is discussed in the 3rd Layer.

scummy cloth one or something like that. If you are standing around the table and the registrar is trying to crowd your side of the table, you feel like saying 'Well, I chose this side first – you go and stand on the other side of the table. [Ros: You feel like saying it or you do say it?] Sometimes you say it, sometimes you don't, sometimes you just squeeze up against him until he finds somewhere else to stand. It's like today, there were too many assistants and the girl I was with [whispered] 'where do I stand? There's no room' and I said, 'just put your elbows out and stand close to the table and stand your ground and don't move'. (Jill 294-319)

This interview extract introduces the third element of becoming a team member. That is, all team members must have some awareness of other team members, their roles and the territories they occupy. This is a complex element because it coincides with the invisible substructure provided by the permanent team. This means that it is almost inevitable that the other members of the multidisciplinary team may not be aware of the nurses' activities. Lee provides the following example:

Sometimes the surgeon's so busy explaining things to the med student – they forget that they might need instruments. I don't know. But you sometimes do feel like you are just hanging around and 'What about me – would you like me to just leave these (the instruments) and I'll just go?' I don't know why it is. I guess they are just so used to us just being there and sometimes they just forget we are there. (Lee 484-492)

Awareness of other team members' activities is an important contributing factor in patient safety. For example, in the previously presented illustration of one-upmanship, the nurse is not fully aware the surgeon's activities, consequently she mistimes her interruption with the consequences described. Awareness of each other's activities can be observed readily during most operations. The ability of the scrub nurse to anticipate what will be required during the course of an operation is one example. The rhythmical and coordinated movements of the scrub team that prevent them obstructing and contaminating each other during the operation is another example. It is one that enables a substantial number of people to work together in a confined space. Team awareness seems to be high during an operation but is less reliable just prior to, and, as has already been argued, very unreliable immediately after an operation. The point has been made that lack if awareness of each other's activities may impact upon the safety of the patient and this is certainly

237

a common concern just prior to the operation commencing. Although many operations will not commence without the surgeon checking that the nurses and anaesthetist are 'ready to go' some appear to have a rushed and disjointed start. Once again the nurses have developed strategies to manage this without disrupting team-peace. These strategies seem to be part of the cultural lore passed from one theatre nurse to another. Lee explains:

> I was always taught that you must be sure that you are ready before you give them the Betadine to prep, the count is important, you would be the first to be blamed if you hadn't counted properly and there was something lost. Make sure you've done your count, you've got everything you need and if they scrub up, make them wait for their gloves or get them gowned but don't give them the prep until you are happy the patient is prepped properly and you've done your count and there is a lot of pressure for that. You know patients, the surgeons draping before they have even got the patient positioned properly and all that sort of thing. So I really stick by that. I say, 'I'm sorry, I'm not ready, patient's not positioned go and wait'. (Lee 727-742)

Both Rose and Barry discuss the importance of ensuring the count is completed before the operation commences. The importance of completing an accurate count before an operation commences to surgical safety has already been addressed, but it may be rushed if team members are not aware of what each other is doing. Rose and Barry provide illustrations of strategies used to slow medical staff down to allow the nurses to complete the count. These include simply telling the doctors to wait (although this does not always work), not providing the skin cleaning solution until everything is ready, having a catheter trolley ready so this can be done (if appropriate) in the interim and not providing the blades until everything else is ready (Barry 789-806; Rose 614-625).

Team awareness is also important in relation to planning for the on-going care of the patient. For example if it becomes apparent that a patient must go to the intensive care unit following surgery, the entire team will be involved in getting him or her transferred safely. This means that all members of the team need to know what is happening so that they can plan and act appropriately. The initial story in the 4th Layer is an example of a team working together in a coordinated manner. In the following field note the scout and anaesthetic nurse have just overheard a private

conversation between the surgeon and anaesthetist. The scout nurse will be directly involved in the transfer but she is not included in the conversation:

> The scout stands back looking concerned and thoughtful with her arms folded. She explains 'we're worried because the patient might go to ICU and if they do I need to arrange a different bed, they don't like the type of bed she has, it shouldn't really matter but it does so we try and get the right bed here and I have to arrange it. It would have been nice to know about this a bit earlier.' She sighs in a resigned manner and moves to the phone to arrange a bed if it is required. It is not certain yet whether the patient will need ICU back up. (FN 3095-3104)

It is likely that in this case the surgeon may not have been aware of the need to swap beds or that the nurses and theatre technicians required some time to arrange this and other equipment. Equally it is likely that the nurses were not fully aware of where the surgeon and anaesthetist were up to in their decision making about the post operative support required by the patient. Lack of communication makes its difficult for all team members to contribute fully to the team effort.

The final element that contributes to the effectiveness of the teamwork is the ability of the team member to contribute to the team effort. The multidisciplinary team relies on solid effort of all team members to meet the demanding expectations of surgery. People not contributing will receive short shrift from other team members. Lee illustrates this clearly:

> ... if you are not pulling your weight people will tell you and there is a real emphasis to be on the ball and being efficient and getting on with it and there is so much pressure these days you know, get as many cases done as you can. If you are not pulling your weight, the surgeons will even tell you, 'come on. Get a move along' and I think there is a real feeling for getting in and getting it done. If you're an odd one that sort of slacks around, they will tell you and get you moving ... if you are not pulling your weight, you will be told. (Lee 850-865)

Sometimes the 'telling' is silent and the point is made with piercing eye contact over to top of the mask. This, combined with the cultural emphasis on activity and teamwork, often has a rapid and positive effect.

One final element that appears to impact upon the ability of people to become team members is their general likeability. Friendliness, a sense of humour, charm and vulnerability all play a role in making a person more attractive to the team. However, these things do not give automatic entry into the team but they will attract support. In the following field note the resident is very new to the area and is extremely anxious. He acts very respectfully towards all the staff and appears awestruck by his new role on the surgical team:

> The resident comes in after the other two surgeons have gowned and gloved and drags on his gown knocking it against a trolley as he does so. The scout looks at him as he rapidly strips it off. 'Did you knock something Matt? We all do it, I'll get you a new gown' She smiles kindly at him but he is humiliated and no one tries to tease him. The scout says, 'Poor Matt, he's a bit lost, but he's sweet, we all like him'. (FN 5538-5546)

It can be seen from this field note that kindly reassurance and self disclosure are two further ways the nurses seek to provide support to inexperienced members of staff.

Becoming a team member within the multidisciplinary team is a complex process. The importance of the team in the culture of the ORS means that all new staff members will have to find their places in the team if they wish to work successfully in the ORS. During their initial period in the area nurses will give them time and support to become members of the team but this is dependent to a large extent on their own abilities to work through the four elements leading to membership.

Closure of the 6th Layer

Effective teamwork is the key to the successful functioning of the ORS. In the ORS two teams co-exist and the nurses are members of both. These teams are the 'nursing' team comprising nurses, theatre orderlies/technicians, clinical aids, administrative and cleaning staff, and the 'multidisciplinary team' comprising the permanent team, the medical staff and visiting allied health professionals. The 6th Layer concentrates on the Multidisciplinary team with particular emphasis on the Nurses and medical staff. This emphasis reflects the nurses' own emphasis on the relationship that acknowledges the key role that the medical staff play in the ORS and the primary relationship that exists between the nurses and medical staff.

A second theme in this layer is the way in which the multidisciplinary team functions. This can be understood in terms of team-peace and team-tension. Team-peace is charactertised by mutual respect, trust and effective communication. When team-peace prevails the multidisciplinary team may engage in team-play which is characterised by teasing, humorous story telling and laughter. Teamwork is threatened with the emergence of team-tension. The worst consequence of this is an irreversible downward spiral to a dysfunctional team and the division of the team into the 'family' and the 'club'. This is the worst extreme of team-tension. The nurses will retreat, shutting themselves down during the operation and calling upon each other for support.

The nurses contribute strongly to promoting team-peace utilising a range of strategies that fall into two discrete categories described by the following cultural phrases 'keeping him happy' and 'there's no *I* in teamwork'. These strategies take into account that the surgeon is the person who will have the greatest influence over the atmosphere in the operating room once an operation has commenced.

The third theme within the 6th Layer is concerned with the process of becoming a member of the multidisciplinary team. Trust and familiarity with the surgeon and the procedure are key elements that contribute to a nurses' acceptance by the medical staff, principally the surgeons. Allied health professionals such as radiographers do not appear to have to seek membership but come to complete a task and leave. Their role is that of visitor. The medical staff however must undergo a process of induction to be accepted by the nurses as part of the multidisciplinary team. This process involves learning what it means to be a team member; learning one's place in the team; learning everyone else's place in the team and making a contribution to the team. While positive personality attributes may elicit greater support from the nurses during this induction period, it is no guarantee of acceptance into the team. The nurses use a variety of strategies to guide new staff through this process. Some of these are supportive and reflect a positive regard for the person in question while others are harsh and act to punish a person who is not acting in a way that is acceptable in terms of the ORS culture.

Conclusion

Introduction

It is the nature of ethnographies that they represent cultures as they were at a particular point in time. By the time accounts are completed, cultures have been subject to subtle changes. This characteristic of ethnographic work is acknowledged when writing the conclusion to this project, for while *Theatre Wear* represents a particular point in time of operating room nursing, the ethnography itself becomes part of the ongoing evolutionary process of re-interpretation. Thus its findings will merge with new knowledge as it arises. This understanding is implicit within the hermeneutic basis of the study. In a world where there is little research and therefore knowledge about the operating room nurses' role, this research has accepted the implied challenge in Gadamer's observation that '... only when the universality found in experience has been attained can we look for the reason and hence begin scientific inquiry' (Gadamer 1975 p.351). By drawing upon shared common meanings about the taken-for-granted aspects of nursing in the operating room, this study has created a foundation for the development of further inquiry into the area of nursing practice in this field.

The conclusion is presented in two parts. Firstly the ethnography is brought to a point of closure in much the same way as a surgical wound is closed. That is the patient is brought back together again and made whole. Like the surgical closure, the ethnographic closure draws the parts together but may be reopened for further exploration. In this it reflects the hermeneutic foundations of the study seeking to '... understand the whole in terms of the detail and the detail in terms of the whole' (Gadamer 1975 p.291). It is not necessarily an end point, rather it acts as a marker from which other inquiries can depart. It presents a final discussion offering possible ways in which the world of operating room nurses might be understood. While

largely theoretical, this part of the work still occasionally draws upon the nurses' voices to illustrate the point being made.

The second part of the conclusion is concerned with the evaluation of the research process and the ethnography produced. Conducting ethnographic research is a moral, as well as an intellectual, undertaking and warrants an account of the research decisions made and actions taken. To this end the works of Tina Koch and Martyn Hammersley form the framework upon which this account is made.

Conclusion part 1: closure of Theatre Wear Must be Worn Beyond this Point

The unique culture of the ORS and the reciprocal relationship that exists between it and the nurses who work there profoundly affects the way in which these nurses act as OR nurses and experience their daily working lives. Because much of their work is taken-for-granted, its value is obscured, overlooked by others and importantly, by the nurses themselves. Although charged with ensuring the safety and well-being of patients throughout their perioperative journeys, and responsible for the overall functioning of the ORS, the contribution of these nurses is often invisible to their non-nursing colleagues and to their patients. Regardless of this the nurses believe that the role that they play in the OR is essential and they appear to be committed employees of the ORS. While the disregard and antipathy that they endure at times can demoralize them, they derive a great sense of pride and pleasure from much of their work. 'Closure' re-engages briefly with two areas of the culture as a whole that seem particularly important to the work-lives of the nurses. They are dominant threads in the six layers that make up the ethnographic account of operating room nursing and are (i) emotional labour and (ii) ritual and routine.

Emotional labour in the operating room

Within the each of the six layers of the ethnography then nurses expended a great deal of energy and time working towards creating a safe, calm environment for people in the operating room. The emphasis of their activities in this regard was on the patients and the surgeons and was evident in any number of ways. For example in the preparation of the patient to enter into the space and territories of the operating room, in the balancing of conflicting calls on time and in the numerous strategies

243

used to support teamwork even at the expense of the individual. This is the type of work that is invisible and cannot be readily accounted for. It is a type of work that has been recognised before and has been termed 'emotional labour'.

In 1983 Hochschild, in her work exploring air stewardesses used the term 'emotional labour' to describe the indeterminate and inexplicable elements of work (normally associated with women). She stated that emotional labour was ' ... the induction or suppression of feeling in order to sustain the outward appearance that produces the proper state mind in others' (Hochschild 1983 p.7) The coupling of the words 'emotion' and 'labour' indicate that this type of work is hard to do and is productive as such the term is particularly useful in understanding much of the work that nurses do (Lawler 1991). It provides a possible way of understanding the working world of operating room nurses. Perhaps engaging in the indefinable practices that constitute emotional work is one reason why OR nurses find it difficult to mount a convincing argument that they care for their patients. Certainly Staden (1998) argues that emotional work is by its nature invisible and therefore is not valued. It is however more likely given that emotional work is common in all areas of nursing (Henderson 2001) that it is the form it takes in the OR that confounds the argument. In the operating room the emotional work extends beyond the patients to include the members of the multidisciplinary team and it is this aspect of the work that while invisible to others, is in the forefront of the nurses' minds, underpinning many of their activities.

Theatre is a place of opposites within which predictability and unpredictability coexist. At once a place of safety and precarious adventure, the operating room is the seat of high drama, a real and metaphorical theatre. Each day in the ORS routine lists of operations are conducted. They are predictable and safe, but the potential for an emergency hovers. The department may swing from methodical routine to high-pressure emergency in an instant. The nurses must be able to respond to both of these extremes and this appears to be part of their motivation to work in the area. Jill sums this up when she says, '... it's an unpredictable place I suppose and I like the unpredictableness of emergency work ...' (Jill 85-86). This characteristic of the OR

and the variety of surgical procedures that are performed create a sense of 'living on the edge'. Studies of the OR that carry titles such as *The Cutting Edge* and *The Scalpel's Edge* suggest that this has been recognised previously. The nurses are perpetually responding to change, change in the patient's condition, the surgeons' preferences, theatre schedules, new instrumentation and surgical techniques. They are in a state of continual reorganisation, constantly refocusing their activities, learning new skills and adapting their behaviour to meet the anticipated or actual demands of the day. It is not surprising that this ability is a source of tremendous pride. It colours the way in which the nurses view themselves, both as competent clinicians and as being different to ward nurses. It contributes to the nurses' sense of being a unique group.

The nurses seem to derive considerable pleasure from doing a job well and the expectations for a high level performance reflect this. Rites of passage, acceptance into both the nursing and multidisciplinary team and the way in which status is attributed all appear to have their foundations, at least partly, within this drive. While the nurses often experience pressure associated with this level of performance and may complain about the expectations of others (most notably the surgeons) it also contributes to their enjoyment and sense of personal satisfaction. It adds an aesthetic element to their role expressed in the beautifully prepared instrument trays, smooth anticipation and calm presence. Barry alludes to the 'elegance of scrubbing' capturing the aesthetic appeal of their work in his comment (Barry 1174).

The nurses appear to be gripped by the type of work they do, relishing the daily dramas that unfold in front of them. There is a heroic discourse within the culture. It is visible for example in their descriptions of their work. In common with many of the nurses, Lee, reflecting on the best aspects of OR nursing, considered a caesarian to be one of the most rewarding operations to be involved with, but she added '... it is also nice, a trauma case where the patient comes in and you think, 'Oh, my goodness me, will we get this one off the table alive'. When they do go to ICU and we have managed to save them, that's probably even better than the caesarean. (Lee

531-541). The desire to 'save, to 'do something' which is evident here suggests why the nurses find the nature of the operating room so compelling.

In a culture in which there is a heroic discourse, it is likely that there will be heroes and antiheroes. This is indeed the case in the operating room. The heroes within this culture are the nurses who confront the surgeons, the nurses who stand up for what they believe, the nurses who can stay absolutely calm and draw the department together and the doctors who value the nurses, participate in the behind the scenes work and care about the patients. It is also a culture with heroic legends, where nurses recount the times when they have got the better of one of the medical staff – the pleasure all the sweeter for its infrequency and the breach of cultural expectations.

Most regularly cast as the antiheroes, the villains of the piece, are the arrogant and demoralizing surgeons but so too are the nurses who do not contribute to the team effort and who habitually confuse the social and professional roles thus disrupting the teamwork. The ability of both these groups to make the working lives of nurses difficult attracts their disapprobation and anger. Finally it is a culture in which allies are identified and called upon when a crisis is at hand. In this culture that has an altruistic and interventionist goal at its heart, the team members are formal allies against disease and injury. Within this central drama and under the veneer of calm created by the emotional labour of the nurses, smaller scale scenes of conflict unfold. In response to this the nurses draw together, seeking support from their allies in order to respond. A time when this is most clearly seen is when the nurses are negotiating the difficult terrain that exists between the vulnerability of the patient and the authority of the surgeon. The operating room culture demands total submission from the patient to enable total control by the staff. Submission is seen as a prerequisite for safety and even though more and more patients are now awake during their operations, they are still rigorously controlled. This submission extends to the ability of the patients to express their needs and preferences and even when conscious they are unlikely to assert themselves. It has been argued the nurses feel compelled to act as their advocates. When the need for advocacy arises however, the

246

inherent power differential between the nurses and surgeons makes it hard for them to act. In these instances the nurses tend to look to the anaesthetists for support.

The difference in status and in associated power between themselves and the surgeons is a primary source of frustration for the nurses. It is evident in the tension between real-time and surgeon-time; it is evident in the discussions of 'doing the magic' and the 'invisible nurse' and it is evident in the way in which the relationships between nurses and surgeons are played out in the operating room. In an environment that is completely orientated towards intervention, and high level technical intervention at that, the nurses appear to spend a great deal of their time engaged in the emotional labour involved in supporting this particular relationship. This effort is evident in the notions of 'keeping him happy', 'there's no *I* in teamwork', and in the emphasis on remaining calm under pressure. While the nurses appear to link the expenditure of this emotional labour to ensuring the well-being of their patients and derive satisfaction from this, it is also their greatest source of frustration, anger and emotional exhaustion. This can be seen in the appearance of 'the fragile I' and the division of the team into the 'family' and the 'club'. It is here that the nurses appear to rely most heavily on each other. By turning to the family nurses can seek and gain support for their emotional work, finding a safe space in which they can seek support themselves.

There are substantial gains to be made from undertaking the emotional labour in the OR. The greatest sense of satisfaction that the nurses express seems to stem from a well-coordinated day that has been filled with successful and challenging operations, excellent teamwork and a sense of fun. 'Team-peace' and 'team-play' are central to days like these and as has been argued the nurses expend great effort on achieving them. On the other hand, the nurses consider the worst sort of day to be one that lacks coordination, where the lists are overbooked, where staff members do not work well together and there is ongoing destructive antipathy and distrust within the team. In these instances of 'team-tension' the emotional labour expended for no apparent gain appears to take too much of a toll on the nurses, exhausting and demoralising them.

247

Central to this experience of their working days is the relationship they have with the surgeons. The nurses' relationships within the multidisciplinary team add much to the texture of their working lives. Supporting their relationship with the surgeons absorbs most of the effort the nurses expend in the form of emotional labour. It is a strange relationship both enriching and enraging the nurses, for while it is the source of great resentment and frustration; it is also filled with humour, benign collusion and admiration. It is also a relationship that the nurses tend to define in social rather than professional terms (a propensity that Tanner & Timmons (2000) observed) using phrases like 'we get on really well' and 'he hates me' to describe their relationships with surgeons.

The importance of the surgeons in relation to the nurses is emphasised throughout this study. It is an emphasis that does not sit easily with the nurses' firm assertion that their principal concern is the patient. One possible interpretation is that the nurses are indeed a surgeon-centric group. Surgeons have traditionally led the theatre and their activity constitutes the role of the operating room. Nurses were originally employed in the theatre as housekeepers and surgeon's assistants, the latter of these two roles still evident in contemporary OR nursing practice and the former still an undercurrent in the stereotyped portrayals of nurses. Nurses, medical students and specialist medical practitioners alike, have played the anaesthetic role and this may help to explain why anaesthetists are not perceived in the same way as surgeons. The nurses' too may be susceptible to the popular image of the surgeon as 'hero', their absorption with them being an expression of hero-worship. Certainly the pride that they take in a surgeon's surgical ability and in the success of an operation supports this, however the contempt in which many of the surgeons are held does not, and suggests that there is more to the relationship than this.

Perhaps the nurses are still pursuing the 'good nurse' image in order to gain acceptance and trust within the multidisciplinary team. As Salvage (1985) writes '… dedication and service to others are put alongside patience, compliance and a refusal to be ruffled or to show feelings of anger or hurt. The 'good nurse' does not complain but accepts with grace and composure everything thrown at her and self-

248

sacrifice is seen as a virtue'. In light of some of the passively aggressive strategies the nurses employ to 'keep the surgeon happy' and the work they do to gain the surgeons' trust, this argument appears somewhat plausible. However, set against their active promotion of patient well-being and safety, their overt professional pride and the status given to nurses who 'stand up' to the surgeons, the good nurse motive appears to be a further oversimplification of the relationship.

Goffman (1959) perhaps offers the most plausible way to understand what it is that the nurses are doing. In his work on team performance Goffman notes that a person from within a team will be '... given the right to direct and control the progress of the dramatic action' (Goffman 1959 p.84). In the case of the operating room, this person appears to be the surgeon who has the power and the authority to increase and decrease pressure within the team. The nurses, acting as barometers, gauge the pressure within the room and act to adjust it in an attempt to restore the environment to one which supports optimal patient safety and team work. This work is hidden work and is linked to the invisibility of the nurses' contribution to the OR. Again Goffman offers a way to understand this. He argues that the performance of a team is largely dependent upon co-operation between team members and that the 'extent and character of the co-operation that makes this possible will be concealed and kept secret' (Goffman 1959 p.91). In this light it is possible that the nurses who appear to make the greatest effort in this respect, are protecting their ability to promote the team's effectiveness by keeping largely silent about this aspect of their work. Instead while presenting a face of calm, dispassionate efficiency in the public area of the operating room, they share their stories of loss and triumph, joy and grief with other nurses in the safe territory of the tearoom. Here they can enjoy, with wicked glee, stories of a surgeon's ineptitude and the quick thinking nurse who saved the situation. They can collectively groan at the choice of music, standard of joke and the slowness of a surgeon. They can angrily dissect a surgeon's unacceptable behaviour, tearing it apart in order to put a colleague back together. And they can express their admiration for a surgeon's skill and the satisfaction of acting within this team. In this way the nurses can enjoy, as Goffman puts it 'the sweet guilt of the conspirators', taking delight in their stories, their secret nurses' business.

Rituals and routines

While the emotional work of the nurses contributes strongly to the cohesion within the OR, so to do the rituals and routines that are characteristic of the area. Analyses of rituals suggest that they are linked to the maintenance of social order (Philpin 2002 and Lee 2001). This is significant for operating room nurses because the OR has been described as a place of ritual (Fox 1992 and Katz 1981). Debates around the acceptability of ritual in nursing practice have tended to define ritual as an irrational, repetitive act (Street 1995 and Benton & Avery 1993). It is arguable however that what is classified as ritual in the operating room is in fact routine. The difference between the two lies in the understanding that is associated with the act. A routine may be repetitive but its purpose is clear and justifiable. A ritual occurs when the original justification for an act has been forgotten and the act is now performed more for symbolic rather than practical purposes (Philpin 2002). Katz (1981) argues that rituals in the OR escape critique in the literature because they are readily linked to practical, scientifically based outcomes but it is possible that they escape critique because they are in fact routine rather than ritual practices. This is not to say that rituals do not exist in the operating room. It could be argued, for instance, that wearing masks for all procedures has the hallmarks of a ritual, with nurses wearing them not to minimise infection but out of habit as a component of their familiar costume.

The 'custom and sentiment' that Hurlock (1976) believes surround any fashion may contribute to their reluctance to give up their masks. It could, however, be argued that not wearing a mask is counter-intuitive for although the nurses might understand that it is largely ineffective its visual impact is suggestive of a powerful barrier against infection. As such it is an important symbol, symbolising the importance of sterility and infection control within this environment. Helman (1994) and Wolf (1988) also argue that rituals have symbolic meaning for the people within a culture. In the operating room this is seen in the form of the rite of passage that new people must pass as they move through the change room, divesting themselves of all vestiges of outside life and donning the distinctive theatre wear.

Perhaps the wearing of masks, the daily changing room ritual that transforms people into operating room nurses and the strict adherence to routines assists the nurses to participate fully in the performance of an operation. To be able to reach inside a person, handle body parts, view the sometimes terrible injuries and diseases effecting their patients, demands that the nurses suspend their normal lives, their normal expectations of what constitutes socially acceptable behaviour. In a world where daily work-life at times borders on the surreal, the rituals and routines that exist as part of the nursing work act, according to Katz (1981) to calm and coordinate the operating room. The findings of this ethnography suggest that this is indeed the case in the ORS.

The culture of the operating room as it is experienced and understood by the nurses is constituted upon particular temporal, spatial and semiotic coordinates. Within these coordinates the nurses' work lives are affected by their relationships with others and between themselves. Their relationship with patients places great demands on their ability to balance the caring aspects of their work with those that are technical. They navigate the numerous spaces and territories of the OR, each with its particular set of rules, skilfully employing the artefacts of theatre and negotiating the conflicting experiences of time to play their part in the intricate performance of an operation. Thus it is that nurses combine the routines of the operating room with their own brand of emotional labour to bring cohesion to this complex, challenging, high-pressure environment. In doing so they create a less stressful place for the surgeons to do their work and a safer place for their patients.

Conclusion part 2: evaluation of the research process

An ethnography is written representation of a culture (or selected aspects of a culture). It carries quite serious intellectual and moral responsibilities, for the images of others in writing are most assuredly not neutral. Ethnographies can and do inform human conduct and judgment in innumerable ways by pointing to the choices and restrictions that reside at the very heart of social life (Van Maanen 1988 p.1).

Gaining access to the OR culture, winning the confidence of the nurses within it and being entrusted with the task of telling their story was crucial to this ethnographic project. In granting these things the nurses took a leap of faith, allowing a virtual stranger to explore their hidden culture and make it public. The implications of this were great indeed as both the nurses and their culture were made vulnerable by their act of trust. As van Maanen's words suggest the responsibility for their protection resides with the researcher and must be the principal underlying concern of all decisions made throughout the research process and within the final ethnographic representation. It is therefore imperative that the ethnographic research process and product is evaluated and the procedural, analytical and ethical decisions are accounted for (Koch 1994; 1996). The second part of this chapter is primarily an account of the major research decisions made, their justifiability and impact upon the conduct and presentation of the ethnography. The validity of the research process has already been presented in the Research Methods (with additional information presented in Appendix VII) and will not be readdressed here. The following areas however are addressed:

- meeting the research purpose;
- addressing the research question;
- effectiveness of the research strategies;
- ethical dimension of the research;
- relevance of the research;
- implications;
- limitations, and
- recommendations.

The chapter and thesis is then closed with a brief section entitled 'Concluding remarks'.

Meeting the research purpose

The study sought to contribute to the ways of understanding nursing in the operating room. In order to do this an interpretive ethnographic account of the day-to-day working lives of operating room nurses was constructed. In writing the account its accessibility to people with no experience of the operating room was a primary concern and was specifically acknowledged within the study aims. In order to demonstrate that the study purpose has been achieved each of the aims of the study will be addressed in turn.

> Study Aim 1: to generate substantive theoretical insights into the world of operating room nursing and to do so from a cultural perspective.

Accounts of the everyday working lives of operating room nurses are sparse and those that exist have not adequately addressed the complex nature of the area. This study has produced an account of operating room nursing that has addressed salient spatial, temporal and semiotic elements of the OR culture and the type and form of relationships that shape the every day working lives of the nurses who work there. The study has sought to capture the complex interrelationships between these elements through engaging in a hermeneutic process, moving constantly between the exploration of specific aspects of the culture and consideration of how these aspects relate to the culture as a whole. Thus the thesis describes the daily activities of the OR nurses, uncovers the shared, culturally constituted meaning that these activities have for the nurses and through their interpretation generates substantive theoretical insights into their world. A theoretical depiction of the OR drawing together the foci of the six ethnographic layers is presented in Figure 9.

Figure 9: Schematic representation of the nursing contribution to the functioning of the Operating Room
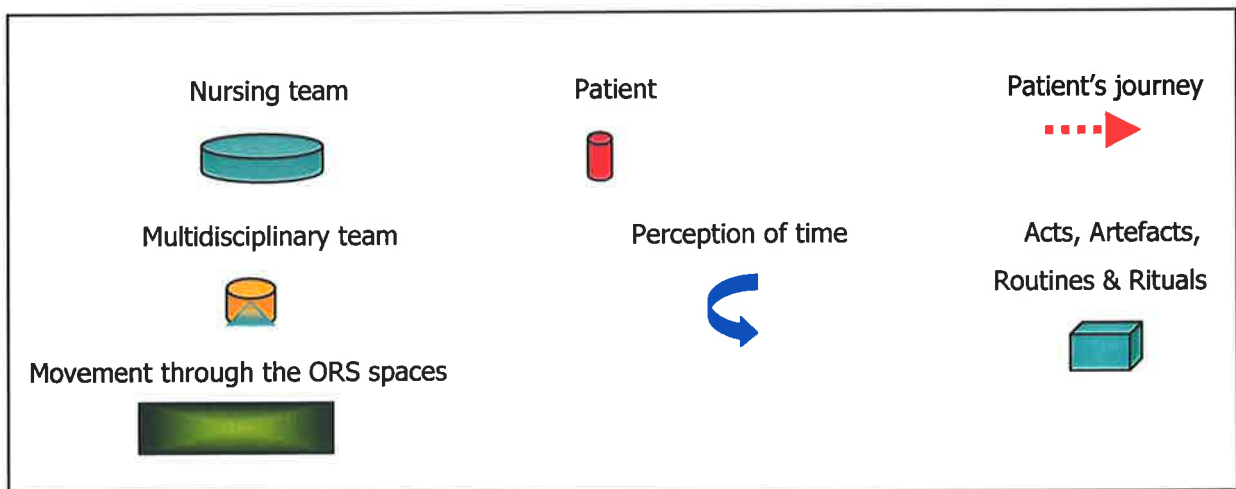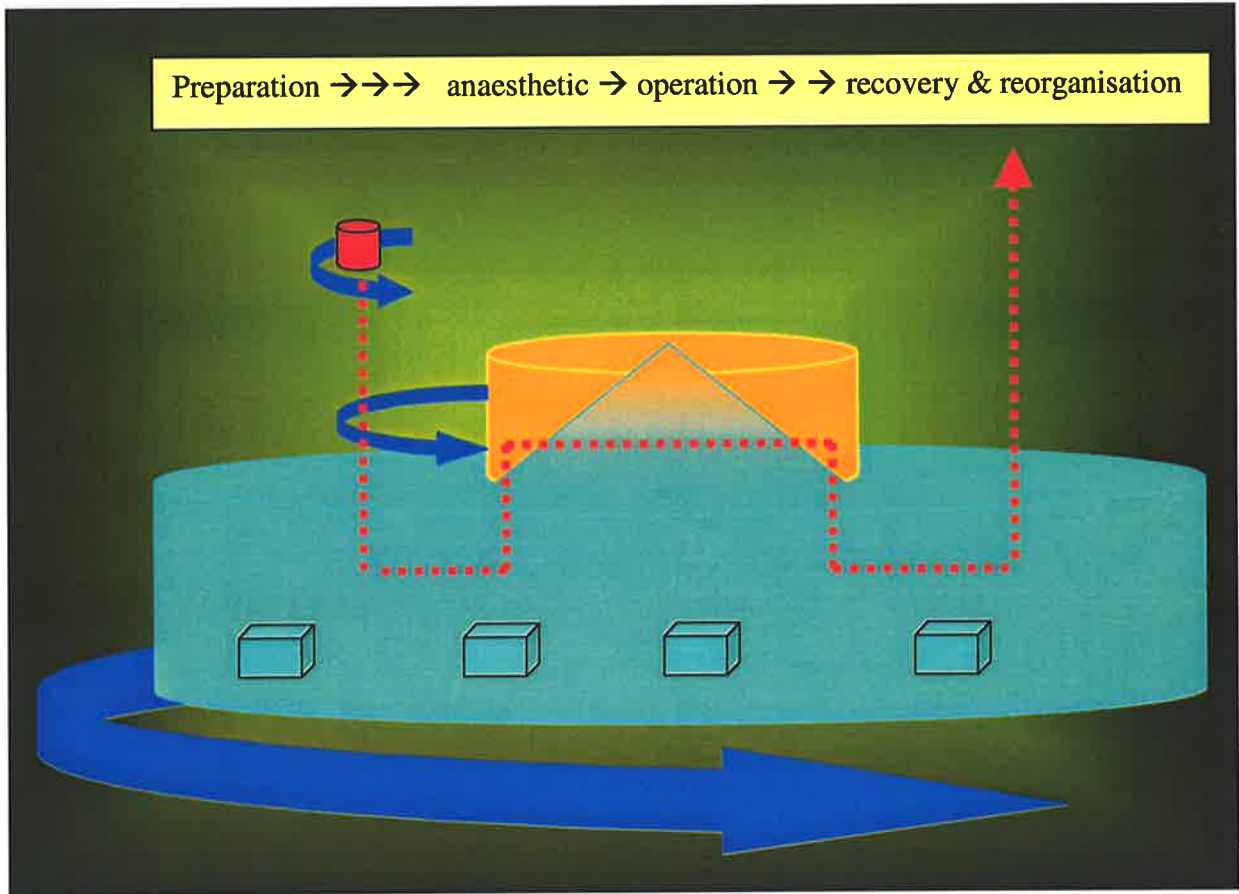
> Study Aim 2: to address the lack of 'nursing voice' apparent in the related literature surrounding operating rooms and operating room nursing by rendering the nurses' accounts of their practice and actions visible in the ethnographic account.

Theatre Wear Must be Worn Beyond this Point is concerned with the working lives of nurses in the operating room. The six layers of the ethnography were constructed on the basis of information gathered through extensive observations of and conversations with these nurses. As such it was the nurses who principally informed the content and structure of the ethnographic account of their world, supporting and rejecting proposed theoretical interpretations with equal vigour. The body of literature that related to the research area was used to establish the background and need for the study and to complement the actions and words of the nurses. The nurses' actions and voices were made clear within the ethnographic account through the use of extensive field notes and interview extracts. Thus the 'nursing voice' was apparent throughout the research process and within the ethnography that was its product.

> Study Aim 3: to enable operating room nurses to gain a fresh perspective on their work, so that they have the opportunity to (i) identify and develop facets of their work that they perceive to be nursing and (ii) to reassess priorities and responsibilities.

The nurses within the OR take much of their work for granted. The knowledge behind many of their actions and activities is tacit knowledge, unspoken and invisible. As a consequence of this the full extent and import of the nurses' contribution to the OR is unrecognised by the nurses as well as by others. This study has created a document that renders the nursing contribution to the operating room visible. The philosophical and methodological foundations of the study create a relationship between researcher and participants such that the end product of the research is a shared creation. Therefore the contribution that the operating room nurses have made to the ethnographic text is profound. As an account of their actions, their explanations, justifications, choices and beliefs the ethnography is a written representation of their work-world as experienced and understood by them. It

255

is therefore a document through which the nurses, should they choose to, can reflect, gaining new insights into themselves, their practices and beliefs about the nursing care they provide.

> Study Aim 4: to produce an ethnographic account that, by reflecting operating room nurses' understanding of their world, could increase their awareness of the ways in which the culture determines their behaviour and conversely how they contribute to making and sustaining that culture.

The hermeneutic ethnographic research methodology supported the maintenance of the cultural perspective throughout the study. Engaging within the hermeneutic circle and thus sustaining the continuous movement between the specific parts of the culture (such as caring for 'crumbles') and the whole of the culture (for example the significance of the 'crumble' within the culture) ensured that the relationship between the parts and the whole of the culture were evident throughout the ethnographic account. The reciprocal relationship between the nurses and the culture was made explicit through this process and was the focus of the ethnography.

> Study Aim 5: to produce a rich account of contemporary operating room nursing that will serve as a historical record.

The ethnography is bound in space and time and reflects operating room nursing as it was when the study was conducted. It is a detailed written account of nursing practice in the OR and is enlivened through rich, thickly descriptive field notes and pertinent interviews with the nurses. Theory is interwoven throughout the ethnography to support but not to submerge its authenticity. As with any written text, *Theatre Wear* is engaged in the continual hermeneutic process of re-interpretation. As such the actual ORS in which the study was conducted and this written representation of that culture have already embarked upon separate journeys. The ORS depicted here has moved on, changing with the passage of time. New staff, new challenges, new technologies subtly mark the ORS, changing its character and its culture. This study therefore has created an account of operating room nursing that will serve as a historical record of this department as it once was. In so doing it provides a platform from which new understanding can be pursued. It has gone some

way towards discovering the shared meaning in experience that Gadamer considers the basis for further scientific inquiry (Gadamer 1975).

> Study Aim 6: to produce an account that would render the nurses' contribution in the operating room visible and understandable to people not working in the area.

The challenge of making unfamiliar experiences familiar, rendering hidden knowledge plainly visible and uncovering shared meaning through a fusion of horizons is central to both the hermeneutic and ethnographic projects. Given the study methodology, clarifying the obscure world of operating room nurses and making it understandable to people with little or no experience of the OR was central to the study purpose. Understanding is, according to Gadamer '... a special case of applying something universal to the particular situation' (Gadamer 1975 p.312). The authorial devices that were used to develop the final text, that is metaphor, synecdoche, metonymy, vivid but concrete description and theoretically supported interpretation, all contributed to achieving the translation of these nurses' world into terms that are familiar and have meaning in the world outside the operating room. In this way the account constructs a familiar and accessible representation of the unfamiliar world of the operating room.

Addressing the research question

The aims of the study were designed to guide the way in which the research question was addressed and the way in which the 'answers' to the question were formulated. To assist this process a number of guiding questions (encompassing what, when, how, who and why) were designed. All of these reflected the ethnographic intent of the study, by constantly referring to the terms of the culture in order to discover ways of understanding the nurses' working lives.

Research Question: What is the contribution of operating room nurses in terms of the overall functioning of the operating room?

The research methodology and methods created a framework upon which to explore the contribution of nurses to the overall functioning of the operating room. By exploring the spatial, temporal and semiotic coordinates of the culture and the three cardinal relationships existing in the ORS this study illuminated the nurses' contribution to the OR. The research uncovered a nursing contribution that suggested the nurses played a significant role in the care of perioperative patients, in the conduct of operations, the coordination of the ORS as a whole and in the maintenance of cultural cohesion most evident in their work within the teams.

Effectiveness of the research strategies

A research strategy that combined rigorous ethnographic methods with a hermeneutic philosophical basis was employed to conduct this study. The data collection and analysis methods employed in this study were (a) observation of nurses at work (including informal interviews) and the production of field notes; (b) interviews and the production of verbatim transcripts; (c) the maintenance of a research journal incorporating a reflective journal, field work journal and research log; (d) a three staged process of analysis that incorporated preliminary analysis through a data management process of coding and categorising, engagement within the hermeneutic circle to explore the interrelationship between the whole and the parts of the nurses' work world and the authoring of the ethnography.

Observation in the field and the associated field noting provided the explicit, concrete descriptions of everyday activities. Data relating to the 'what, when, how, where and who' of the OR culture was gathered effectively using this method. Both formal and informal interviews complemented and strengthened the observations. They were able to clarify and focus the observations by suggesting 'why' things happened the way they happened. The combined journal provided a forum in which prejudices, conundrums and ideas could be written down and pondered. Additionally

it provided a structured log of research activities that, in light of the many potential paths of inquiry, was an invaluable navigational tool.

The data management process that formed the preliminary analysis sorted out a complex mass of data into manageable pieces while still retaining the data as a whole set. The coding and categorising of the data provided possible entry points into the hermeneutic circle, and a safe base that could be returned to during the sometimes confusing engagement within the hermeneutic circle. The hermeneutic circle itself provided the forum for the intellectual and intuitive exploration of the data. The methods chosen to support and guide the authorship of the ethnography allowed interpretations to formulate as the writing was being done, thus contributing to the ongoing ethnographic process of discovery.

Ethical dimensions

In their discussion concerning the responsibility of the researcher to protect anonymity and the safety of the participants Lofland & Lofland state ' ... [t]heir goal, *as researchers*, should be neither moral judgment nor immediate reform, but *understanding.*' (Lofland & Lofland 1984 p.29 original emphasis). This has been the goal of this study and the way in which the research strategies have been executed has had this ethical principal at its core.

Writing an ethnography is fundamentally about writing truthfully. Clifford & Marcus (1986) write that ethnographers must question the way in which they construct others. Within this particular study a great deal of care has been taken to represent the work world of operating room nurses truthfully and not to pick and choose what will and will not be divulged. The way in which the nurses' world is represented is possibly the most significant ethical endeavour of this study. As Geertz says:

> *Once ethnographic texts begin to be looked at as well as through,*
> *once they are seen to be made, and made to persuade, those who*
> *make them have rather more to answer for* (Geertz 1988 p.138).

The nurses have been involved in the creation of the account of their story at every stage of its development and their words and actions appear throughout the layers of

the ethnography. Every precaution has been taken to ensure that this account is a truthful interpretation of the everyday world of operating room nurses.

Clifford & Marcus also suggest that writing ethnography is a profoundly moral task and incongruity between what the author must write and what he or she would rather write are inevitable. They question the consequences of this personal discord and ask:

> *If we are condemned to tell stories we cannot control, may we not, at least, tell stories we believe to be true* (Clifford & Marcus 1986 p.121).

Occasionally during the observations nurses told stories but then requested that they not be included in the data. While these stories were recorded, and the possibility of their inclusion in the data was discussed, the nurses' wishes were observed and the stories were not included in the thesis.

Protecting the rights of the patient during observations was imperative as they were not the focus of the study and had not consented to being observed. Their permission was sought to enable the observation to occur during their operations and all agreed. Maintaining confidentiality and anonymity meant deleting or changing information that would lead to easy recognition within the small community of the town in which the ORS exists. Rigorous attention was given to ensuring that all people involved in an observation were aware of and agreeable to being observed. The rights of people who expressed a desire not to be observed were upheld.

The ethical implications of leaving the field were also addressed. Participants may have felt that they have been used and then abandoned (Wilson 1989). In order to lessen this problem the post-contact with the ORS was maintained on a professional, non-research basis through a variety of shared projects. While this contact has slowly reduced, access to the theatre is still freely available and contact with individual nurses has continued.

This section has addressed the validity of the research process and product, the adequacy of the research strategies and the ethical dimensions of the research. The

adequacy of the research however must also be judged on its relevance to the participants, the public and to its contribution to existing knowledge.

Relevance of the research

The relevance of the research will now be considered through a discussion of its implications, limitations and recommendations for the future.

Implications

> *If a man seriously desires to live the best life that is open to him, he must learn to be critical of the tribal customs and tribal beliefs that are generally accepted among his neighbours* (The Reith Lectures, Betrand Russell 1949 p.82).

Nurses in the operating room have been popularly constituted as technicians, a task-orientated group of automatons who, lacking autonomy, seek refuge in ritualised practices. When perceived as an adjunct to the surgical project, their work is diminished to the status of a mechanical performance of tasks, the purpose of which is solely concerned with serving the surgeon. Operating room nurses may choose to challenge any claims to legitimacy that this taken-for-granted way of interpreting their contribution makes. They could reconstitute themselves in the minds of people both within and outside the nursing profession, as legitimate providers of nursing care. In order that they may be able to do this, they must speak from a position of authority, an authority that is based on critical insight. Without this they will remain vulnerable to the whims of others who wish to determine their future. Rather than meekly allowing change to be wrought that could profoundly affect them, operating room nurses could draw upon their knowledge about themselves, free themselves from obedience to policy makers who do not understand the work they do and assert their authority to determine their own futures. For as Gadamer says, 'Authority ... has nothing to do with blind obedience to commands. Indeed, authority has to do not with obedience but rather with knowledge' (Gadamer 1975 p.279).

This study has produced an account of operating room nursing that reflects the nursing contribution, the nurses' experience and understanding of their working world and has generated substantive theory about this fascinating area of nursing

practice. It has thrown some light upon the hidden aspects of their role. The study has shifted the focus away from the customary area of dominant interest, the surgical performance, and refocused on the nursing work. By observing the nurses as they work and by listening to their own interpretations of their world, the study has rendered areas of operating room nursing practice more accessible. In doing so it has contributed to the process of understanding this hidden world and has contributed to the development of foundational knowledge that these nurses can draw upon. It has generated knowledge that may be useful to nurses as they construct arguments to dismantle the destructive stereotypes associated with nursing in the operating room and influence decisions made that affect their future.

Theatre Wear Must be Worn Beyond this Point offers one interpretation of the OR nurses world. It is not definitive. It provides a text upon which nurses can reflect about their practices, their values and their relationships with other team members. The ethnography is a holistic work but its composite parts (the layers) offer an alternative way to consider and construct arguments about this area of nursing. It offers a possible platform for the development of further knowledge about the area. It offers people who have little or no experience of the operating room some insight into a secret world and does so in such a way that the nurses speak directly to the reader. In doing this, the study recognises the authority of the nurses' voices in the representation of their story.

Limitations

An ethnography cannot hope to address the entirety of a culture and this ethnography is no different. The areas that were chosen to write about are significant to the operating room nurses who participated in the study but are not the only areas that are significant to them. Another ethnography while discovering similarities would also find new areas to explore.

Similarly this study applies to only one operating department in one state of Australia. While nurses within other OR departments may recognise elements of the work as having applicability to their setting, theirs will be a different story. This ethnography does not seek generalisability and therefore cannot be considered as

representative of all operating rooms and the nurses who work within them. This has implications for the impact that the study can have, for although it can act as a point of departure for other studies on this area, it is not the definitive account of nursing in the operating room. It is possible however that readers who have experience of operating rooms may recognise similarities and determine the extent to which the information is transferable to their own setting

Recommendations

Although this study has provided an insight into operating room nursing practice and the way it is experienced and understood by the nurses it is only one perspective of the area. The complexity of the nurses' role in this important and dynamic area of health care demands further attention. Further clarification is needed for example on the relationship between the nurses and their patients for it is this information that will help nurses respond appropriately to change and refine their practices to continue to be able to provide high level patient care in the technological world of the operating room. Further work needs to be done to understand the nurses' contribution in the teams that coexist in the operating room. The insidious substitution of nurses by unregistered theatre workers cannot hope to be addressed effectively by the nurses unless they are able to clarify their impact on the functioning of the teams. Unless operating room nurses are knowledgeable about their contemporary practices and can provide a clear account of them, not only will today's nursing practice be vulnerable to outside influence, but more importantly the future of nursing practice in the operating room will be taken out of nurses' hands, their voices will not be heard and others will speak for them who may have the dollar rather than the welfare of the patient at the heart of their decisions. Operating room nurses must understand their contribution and know their own worth to be able to confront this challenge and take control of their own futures.

Concluding remarks

Nurses in the operating room contribute highly developed technical skills and extensive specialist knowledge embedded within an ethos of care. They provide sophisticated patient care while maintaining the smooth functioning of the operating room and its teams. Nurses bring cohesion to this complex, high-pressure

263

environment in which, every day, patients are suspended between life and death, their lives on the line. Without them the OR runs the risk of becoming fragmented, uncoordinated and ineffective and the needs of these most vulnerable of patients will be submerged beneath the demands of the dominant technological imperative. The true value of operating room nurses has been overshadowed by the destructive stereotypes that are ascribed to them. The origins of operating room nursing have contributed to the customary acceptance of the image of these nurses as subservient technologists, but so too has the inadequacy of the nursing arguments raised against these assertions. These combine together to create a powerful threat. As Gadamer warns:

> *That which has been sanctioned by tradition and custom has an authority that is nameless, and our finite historical being is marked by the fact that the authority of what has been handed down to us – and not just what is clearly grounded – always has power over our attitudes and behaviour* (Gadamer 1975 p.280).

It is time to challenge the authority of this traditional understanding of operating room nurses and confront the customary acceptance of it as legitimate knowledge. This thesis provides one interpretation of the nursing contribution to the operating room and in so doing can play a part in the development of the nursing voice raised in support of the nurses' role in ensuring the safety and well being of their patients during their perioperative journeys.

Appendices

Appendix I ACORN competency standards

Competency Standard1: The registered nurse functions in accordance with legislation, common law, hospital unit policies and Codes of Conduct and Practice which affect perioperative nursing practice.

Competency Standard 2: The registered nurse conducts perioperative nursing practice in a way which can be ethically justified and is consistent with hospital philosophy

Competency Standard 3: The registered nurse applies nursing knowledge and skills to endure a sage environment for perioperative patients and team members.

Competency Standard 4: The registered nurse performs a perioperative nursing assessment of the patient.

Competency Standard 5: The registered nurse plans perioperative nursing care in consultation with members of the healthcare team and the patient, with or without significant others.

Competency Standard 6: The registered nurse implements nursing care for the perioperative patient.

Competency Standard 7: The registered nurse communicates and documents relevant information effectively.

Competency Standard 8: The registered nurse provides ongoing evaluation of the perioperative patient's progress.

Competency Standard 9: The registered nurse collaborates with members of the multidisciplinary team to manage the resources within the perioperative phase.

Competency Standard10: The registered nurse undertakes quality activities within the perioperative services unit/department.

Competency Standard 11: The registered nurse recognises the need for ongoing personal and professional development.

265

Appendix II   Information sheet: research study

A hermeneutic ethnographic exploration of nursing in the operating room

Investigator: Rosalind M. Bull, RN, PhD candidate (University of Adelaide)

The purpose of this study is to uncover cultural aspects of nursing in the operating theatre. By discovering this I hope to raise awareness of professional, educational and personal issues which have significance for operating room nurses. The study will be conducted in a metropolitan hospital in Northern Tasmania and will include both observation of the nurses at work in the operating room and interviews with nurses who consent to be interviewed.

Observations will conducted over a four-month period and will occur on early, late or night shifts. I will always ask your permission before I observe you and you may withdraw that permission at any time.

You are free to refuse to be observed in the study at any time even though you may have given your consent to be observed previously.

If you have questions regarding this research study please contact:

Rosalind Bull		Rosalind Bull
23 Fairthorne Rd	OR	19 Crompton Drive
Trevallyn Tas 7250		Wattle Park, SA 5066
Ph. 03-63341559		Ph.08-83323229

I can also be contacted at work on 03-63243085 or email me at
Rosalind.Bull@utas.edu.au
If you have any concerns regarding this research study please contact me as above or either of my supervisors:

Dr Mary FitzGerald RN,PhD	Dr Judy Sankey RN, PhD
Department of Clinical Nursing	Tasmanian School of Nursing
University of Adelaide	University of Tasmania
Adelaide, S.A. 5000	P.O. Box 1214 Launceston, Tas, 7250
ph. 088-3033637	ph. 03-63243318

Appendix III Information sheet accompanying the consent form

A hermeneutic ethnographic exploration of nursing in the operating room
Investigator: Rosalind M. Bull, RN, PhD candidate (University of Adelaide)

The purpose of this study is to uncover cultural aspects of nursing in the operating theatre. By discovering this I hope to raise awareness of professional, educational and personal issues which have significance for operating room nurses. The study will be conducted in two metropolitan hospitals in Northern Tasmania and will include both observation of the nurses at work in the operating room and interviews with nurses who consent to be interviewed.

Observations will conducted over a four-month period and will occur on early, late or night shifts. I will always ask your permission before I observe you and you may withdraw that permission at any time.

Information will also be gathered through interviews and will be tape recorded. I will conduct the interviews at a time and a place suitable to you. This could be in the work setting, at your home or mine for example. The initial interview will last approximately 1 hour, and the second interview (if needed) will last approximately 30 minutes. During the interviews you will be invited to discuss operating room nursing from your practice perspective. Tapes will then be transcribed and your name and any identifying information will be deleted at this time. Following this I will send you a copy of the transcript for your interest and validation. At all times the principle of confidentiality will be observed.

You are free to stop the interview and/or withdraw from the study at any time even though you have given your consent to participate.
If you have questions regarding this research study please contact:

Rosalind Bull		Rosalind Bull
23 Fairthorne Rd	OR	19 Crompton Drive
Trevallyn Tas 7250		Wattle Park, SA 5066
Ph. 03-63341559		Ph.08-83323229

I can also be contacted at work on 03-63243085 or email me at
Rosalind.Bull@utas.edu.au
If you have any concerns regarding this research study please contact me as above or either of my supervisors:

Dr Mary FitzGerald RN,PhD	Dr Judy Sankey RN, PhD
Department of Clinical Nursing	Tasmanian School of Nursing
University of Adelaide	University of Tasmania
Adelaide, S.A. 5000	P.O. Box 1214 Launceston, Tas, 7250
ph. 088-3033637	ph. 03-63243318

THE UNIVERSITY OF ADELAIDE

HUMAN RESEARCH ETHICS COMMITTEE

Document for people who are subjects in a research project

CONTACTS FOR INFORMATION ON PROJECT AND INDEPENDENT
COMPLAINTS PROCEDURE

The Human Research Ethics Committee is obliged to monitor approved research
projects. In conjunction with other forms of monitoring it is necessary to provide an
independent and confidential reporting mechanism to assure quality assurance of the
institutional ethics committee system. This is done by providing research subjects
with an additional avenue for raising concerns regarding the conduct of any research
in which they are involved.

The following study has been reviewed and approved by the University of Adelaide
Human Research Ethics Committee:

An exploration of the ways in which operating room nurses care for their patients:
An interpretive focused ethnography based in Gadamerian Hermeneutics.
**(now entitled: "A hermeneutic ethnographic exploration of nursing in the
operating room")**

1.   If you have questions or problems associated with the practical aspects of
your participation in the project, or wish to raise a concern or complaint about the
project, then you should consult the project co-ordinator:

Name: Dr Mary FitzGerald

Tel:088-3033637

2.   If you wish to discuss with an independent person matters related to

- making a complaint, or
- raising concerns on the conduct of the project, or
- the University policy on research involving human subjects, or
- your rights as a participant

contact the Human Research Ethics Committee's Secretary on Tel: 830 34014.

Appendix IV Consent form

**THE UNIVERSITY OF ADELAIDE
STANDARD CONSENT FORM**
See also Information Sheet attached

1. I, *(please print name)*
    consent to take part in the research project entitled:
    A hermeneutic ethnographic exploration of nursing in the operating room

2. I acknowledge that I have read the Information Sheet entitled:
    A hermeneutic ethnographic exploration of nursing in the operating room

3. I have had the project, so far as it affects me, fully explained to my satisfaction by the research worker. My consent is given freely.

4. Although I understand that the purpose of this research project is to improve the quality of medical care, it has also been explained that my involvement may not be of any benefit to me.

5. I have been given the opportunity to have a member of my family or a friend present while the project was explained to me.

6. I have been informed that, while information gained during the study may be published, I will not be identified and my personal results will not be divulged.

7. I understand that I am free to withdraw from the project at any time and that this will not affect medical advice in the management of my health, now or in the future.

8. I am aware that I should retain a copy of this Consent Form, when completed, and the relevant Information Sheet.

Name .... **Signature/date**

WITNESS
I have described to *(name of subject)*
the nature of the procedures to be carried out. In my opinion she/he understood the explanation.

Name .... **Signature/date**

STATUS IN PROJECT : investigator

Appendix V Opening interview questions

Questions and prompts to start with:

How long have you been an operating room nurse? (Demographics)

Why did you go into it? (Background of participant)

Why do you stay in it? (Background of participant - opening to interview)

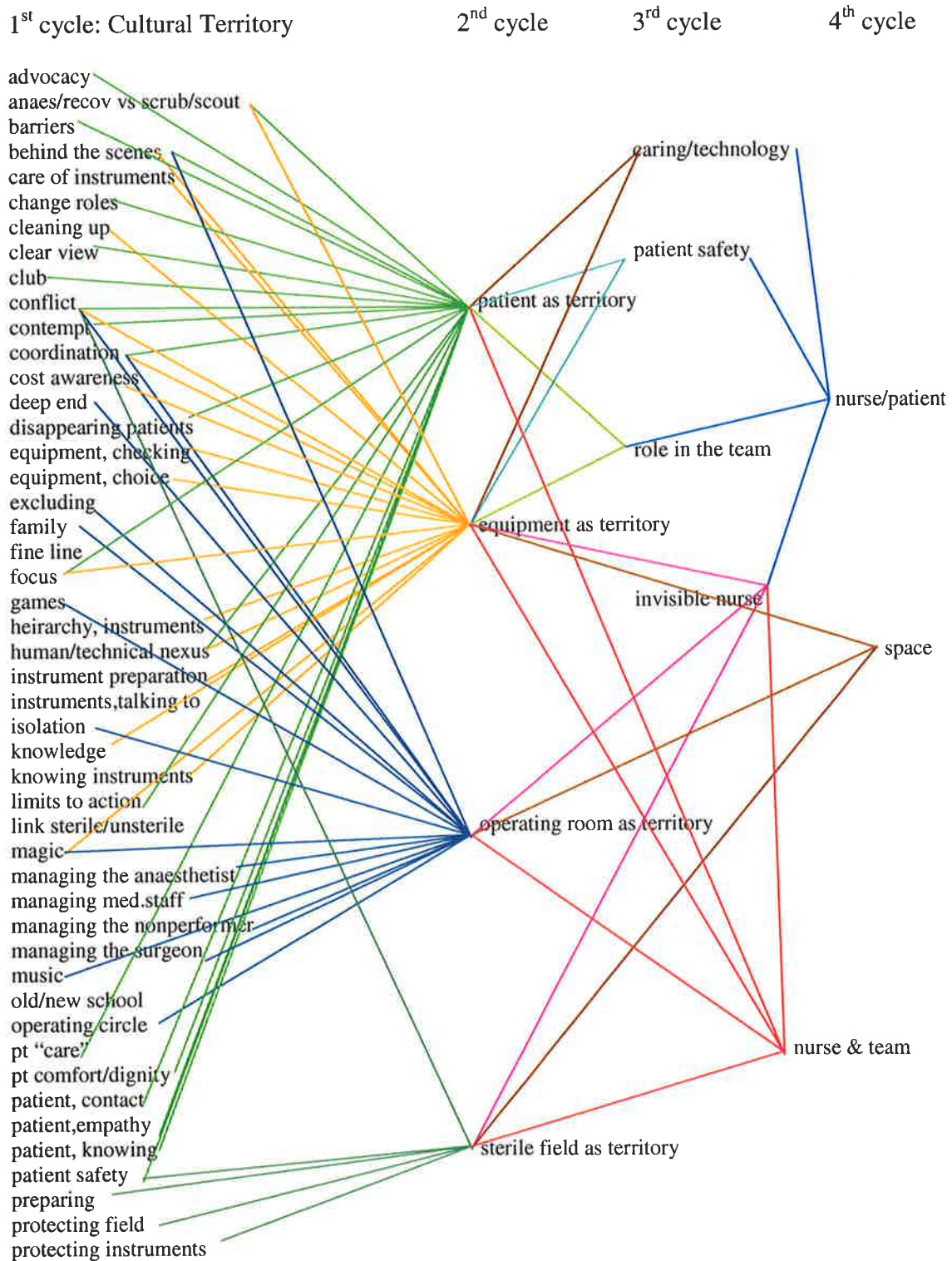Tell me about nursing in the operating room.

Examples of possible prompting questions used to test hunches on the developing themes from the field data:[*]

- It seems to me that some operating lists go well and others poorly. Tell me about that from a nursing point of view.

- I often hear nurses say 'just another thing for us to do' could you explain that to me.

- Many of you talk about the 'team' and 'teamwork' please explain that to me.

- One phrase that crops up often is 'this will keep him happy' what is meant by that and how can 'he' be kept happy?

- I also hear 'we are the patients advocate' quite often. What does that phrase imply?

- I notice that the scrub nurse tends not to talk with the patient. Why is that?

- What happens to the scrub team when the scout nurse leaves the room?

- Some of you are referred to as 'a good scout, a good scrub' what makes a person a good scout? Good scrub?

---

[*] Not all of these prompts and questions would occur in the same interview but are provided as examples.

Appendix VI Conceptual mapping for data analysis

1st cycle: Cultural Territory   2nd cycle   3rd cycle   4th cycle

advocacy
anaes/recov vs scrub/scout
barriers
behind the scenes
care of instruments
change roles
cleaning up
clear view
club
conflict
contempt
coordination
cost awareness
deep end
disappearing patients
equipment, checking
equipment, choice
excluding
family
fine line
focus
games
heirarchy, instruments
human/technical nexus
instrument preparation
instruments, talking to
isolation
knowledge
knowing instruments
limits to action
link sterile/unsterile
magic
managing the anaesthetist
managing med.staff
managing the nonperformer
managing the surgeon
music
old/new school
operating circle
pt "care"
pt comfort/dignity
patient, contact
patient, empathy
patient, knowing
patient safety
preparing
protecting field
protecting instruments

caring/technology
patient safety
patient as territory
role in the team
nurse/patient
equipment as territory
invisible nurse
space
operating room as territory
nurse & team
sterile field as territory

271

Appendix VII: Validity of the research: expanded account

In adopting the term validity, Hammersley uses it in the sense of how truthful (trustworthy or valid) the ethnography is (Hammersley 1998). To ascertain this he suggests four main areas that must be considered:

- adequacy of definitions;
- plausibility and credibility of the descriptions;
- relationship between the description and the claims that are made, and
- attention to the 3 main sources of error in judgment

Adequacy of definitions

The definitions of frequently used terms (for example 'anaesthetist') were presented in the introduction to the thesis and were drawn from recognised standard operating room textbooks. To prevent this list from becoming cumbersome words that arose only once or twice in the text (for example 'pat slide' and bair hugger') were defined in the footnotes as the need arose. All definitions were stated in clear language designed to promote understanding in people with little or no experience of the operating room. Definitions of theoretical concepts such as the 'fragile I' were provided through description and supporting evidence from the fieldwork.

Plausibility and credibility of the descriptions

The descriptive accounts of operating room nursing practice were drawn directly from the field notes and were supported by extracts from interviews. The process of obtaining and expanding the field notes was meticulously conducted, as was the process of interviewing and creating verbatim transcripts. This is accounted for in the chapter addressing research methods. The nurses had free access to the field notes and read each layer of the ethnography. Their comments, suggestions and criticisms were openly and actively sought enabling descriptions to be strengthened and authenticated. Although some descriptions in the field notes were interesting they were not included in the thesis because the weight of evidence contained in the data suggested that they were not reflective of the everyday world of operating room nurses. For example the act described may have occurred only once in a series of observations undertaken in similar circumstances. While descriptions of aberrant

occurrences were not included in the ethnography some of them suggested possible avenues of inquiry that were then explored during fieldwork.

The relationship between the descriptions and the claims made

The data management and analysis procedures described in the Research Methods were designed to ensure that credible relationships existed between the descriptions and the claims made in the form of interpretations within the ethnography. Here the importance of ensuring the descriptions' credibility was critical to the efficacy of these processes. Once again the nurses themselves were invaluable providing critical feedback on the appropriateness of specific descriptions as illustrations of the interpretation being made. As constructs were developed there was constant referral to the data to ground the processes of theorising in the word of the OR nurses as it was observed and described during the fieldwork.

Attention to the 3 main sources of error in judgment

Hammersley (1998) contends that there are three main sources of error in ethnography. They are:

- reactivity which concerns the effect that the research and the researcher have on what is being observed;
- misperception of something observed, and
- constraints related to the researcher.

Their potential to impact upon the validity of this ethnography, as with any, was substantial and necessitated important decisions be made and actions be taken all. An account of these decisions and actions is now presented.

Reactivity

> *The success of any fieldwork endeavour depends inherently on the results of the unofficial study the observed undertake of the observer* (Van Maanen 1991 p.31).

Observing and interviewing in the operating room meant, as it does for all research undertaken in natural settings, that the perspectives and perceptions of both the researcher and participants shape and are shaped by the study process (Vidich 1969 p.86). The researcher's presence in the field does impact upon the culture and the

273

people within it. Schatzman & Strauss (1973) consider this to be a paradoxical situation arguing that the researcher's presence changes the scene but the failure of the researcher to act appropriately also changes the scene. Decisions relating to this issue arose in the conduct of this study particularly in relation to the balance between participation and observation. These excerpts from the research journal illustrate the point:

> Tonight the scout nurse left the theatre without telling the scrub nurse. I haven't seen that before. She didn't notice for a while but then they needed a suture. The scrub nurse looked up and of course there was no one there but me. She hesitated a bit but then asked if I would get her a suture. Well I could do that, so I did and everything went back to normal and the scout came back. But I wonder what on earth would have happened if I had not been there. Would they just have to stop? If I refuse to pass a suture will that annoy them and limit my access to the theatre? (Research journal).

The second excerpt links to a story (FN 1404-1412) in the 5th Layer of the ethnography:

> I refused to pass a suture tonight. The scout had gone out to tea and the reliever just wandered out as well. The scrub nurse looked up and there was no nurse there. She started to ask me to pass a suture and I said I was sorry but I was only there to observe. Well that was scary. They couldn't believe I wouldn't do it and the operation couldn't continue. I honestly don't know if I could have held out much longer because even in those few seconds I knew that the patient was not getting best care. Fortunately the nurse came back and that little hiatus was over. But I did observe just how important that relationship is between scrub and scout and how dependent the scrub team are on that nurse (Research journal).

The issue of reactivity has long been recognised in the literature. Schwarz & Schwarz (1969) argue that the presence of the researcher can affect the way in which the participants act. Shaffir & Stebbins concur stating that participants may respond by 'putting their best foot forward' (Shaffir & Stebbins 1991 p.13). This has implications for 'misperception' and is addressed there. Other possible responses include regulating access to areas (Lofland & Lofland 1984) and being overprotective of the research (Burgess 1982). These latter two issues were evident in this study as illustrated by the following extract from the research journal.

> I am not allowed to observe two of the lists because the nurses consider that I do not need to be exposed to those particular

surgeons. I have been denied access to these surgeons and I believe that the reason is that the nurses are protecting me from harm. I believe this because they have said things like, 'oh you really don't want to be in there, he's a total bastard', 'you really don't' need to see that', 'you're not ready for that'. I am interested in this protectiveness. Why is it that I need protection and they do not? What am I not ready for? What are the cultural beliefs and values that are invested in this protective behaviour? (Research journal)

Schwarz & Schwarz (1969) suggest that long periods of fieldwork can effectively reduce the impact of reactivity. In this study the extensive period of observation, work-in-progress meetings and personal contact maintained throughout the research process did reduce the reactivity of the study participants. The protectiveness and gate keeping that were evident at the beginning of the fieldwork steadily declined as fieldwork progressed. By the second major round of data collection they had disappeared and free access to observe in all theatres was granted.

Misperception

During the conduct of this study there were three main threats to clear perception of the everyday working lives of the nurses. These were the attraction of unfamiliar acts, participant truthfulness and the researcher's prejudices. The first of these is summed up by Kellehear who suggests that 'the unusual attracts, the familiar [is] taken for granted' (Kellehear 1993 p.128). This issue was evident at the beginning of fieldwork. The technology of the Operating Room and the intricacy of the operations performed within them were initially absorbing because of their unfamiliarity. The first two observations conducted produced very limited field notes as much of the time was spent moving away from the 'lay' fascination with operations and refocusing on the area of research interest. Fortunately there were other issues that also needed to be streamlined at this time. For example writing field notes in the theatre distracted the nurses and changed their activities. In this period the field noting method described in the Research Methods chapter was developed. The surgeons' enthusiasm for involving bystanders in the operation also had to be addressed. The reiteration of the research purpose accompanied by the complete and pointed focus on the nurses that was required to deter the surgeons from drawing attention to their work also helped to concentrate the observations appropriately.

275

The field notes and the staged movement from grand tour observations to selective observations served to highlight the importance of the taken-for-granted familiar occurrences and clearly indicated when they were unusual and not typical of the operating room culture. The decisions about what aspects of the culture to concentrate on and what to regard as peripheral to the research purpose were strengthened through this process. The difficulty of ascertaining the correct sequencing of data collecting identified by Gans (1982) was also overcome in this manner. It also helped develop understanding about the culture within the duration of the data collection period for while members of a culture incrementally learn the culture as they live within it, researching the culture demands that this process is accelerated.

Kellehear (1993) notes that fatigue and boredom coupled with inadequate or delayed recording of field notes also contribute to the potential to misperceive aspects of the culture. For this reason and as described in the Research Methods, a structure for writing and expanding field notes was developed that supported rapid recording of observations. Additionally the length of time that was spent actively observing each day was varied. The ability to concentrate fully on the observation and the appropriateness of what was being observed were the criteria for determining the length of an observation session.

The second threat lay in the participants' interpretation of the truth and the issues that may have influenced the way in which they represented the truth. For example Dean & Whyte (1969) believe that participants may have ulterior motives, a desire to please or may be constrained in what they can say. Within this study the nurses did have an ulterior motive. They wanted people to know what they did and to value their contribution to the operating room. This was evident in some of the initial informal unsolicited interviews. While the nurses' stories contribute a great deal of data through the formal and informal interview process, the observations of them at work served as a point of reference for what they were saying. After a relatively short period, preliminary ideas emerging from the observation data could be

presented to them for clarification. Their stories could then be subjected to a level of critique. Sandelowski (1993) urges researchers to search stories for discrepancies and decide whether these discrepancies represent revisions of the same story or completely different stories. Within the study this was particularly important when the interview transcripts were returned to the interviewees for verification, an important step in the research process (Bloor 1983). While there was only one substantial revision to one transcript, the importance of it to the interviewee and to the meaning of the words in the transcript was discussed at length with the interviewee and an outcome negotiated.

The third and final threat posed were the prejudices (use in the hermeneutic sense) of the researcher. Throughout the fieldwork the researcher continues to exert influence on the field that is acknowledged and accepted in ethnographic research (Schatzman & Strauss (1973). The researcher brings theoretically based ideas and beliefs to the setting that help shape the study (Glaser and Strauss 1967). In entering the ORS the 'foreshadowed problems' that Malinowski (1922) calls the theoretically derived ideas the researcher has about a culture before entering it had to be acknowledged. It was important therefore that the behaviour, values and beliefs that could influence this study were clarified and accounted for (Lipson 1991). The decision not to bracket was made early in the research process with the choice of the research methodology. Gadamer's work suggested that bracketing was not possible and the ethnographic nature of the project confirmed that it was not necessary. Fetterman (1989) concurs believing that ethnographers cannot maintain a neutral stance. By engaging within the hermeneutic circle, conducting the research using ethnographic strategies, such as the combined research journal, that strengthened the rigour of the research process this threat was reduced. The work-in-progress meetings, personal communication and continual review of the research output by the nurses also supported this endeavour.

Constraints affecting the researcher

The final criteria for determining the validity of the research is the way in which the constraints emanating from the researcher were addressed. Within the context of this study there was one major constraint that needed to be overcome. Steps in the research process, particularly in the conduct of the fieldwork, were threatened simply because the researcher was new to ethnographic research. The call to judge situations accurately, to respond appropriately and make sound research decisions where continuous during the fieldwork. The areas in which important judgments and decisions had to be made were gaining and maintaining access; presentation of self as researcher, and concluding the fieldwork.

Gaining and Maintaining Access

The process of gaining access to the ORS was multi-layered and complex. The standard process of gaining ethical clearance and thus formal access is described in the Research Methods as is the gaining of more informal access. These components of the process will not be revisited here, however pertinent aspects of maintaining access will be discussed.

Gaining initial access, while complex, is relatively easy when compared with the longer-term objective of maintaining access once it has been gained. It is tempting, on reading some ethnographies to consider access as something which is to be 'got' and once got can be forgotten. Schatzman & Strauss (1973) suggest that the issue of access loses its importance for researchers once the data begins to flow. Within this study access was fragile and there were ebbs and flows in the degree of access given which demanded careful attention. This is not unique to the operating room. Hammersley & Atkinson (1995) in their discussion of fieldwork in general, note the changeable nature of access and the need to engage in ongoing negotiations to maintain it. Posing a threat and breaking cultural rules did impact upon access at the outset of the fieldwork. One-to-one conversation and work-in-progress meetings reduced the impact of the former. The latter was more difficult, for while active concentration on acceptable behaviour helped to some extent, some of the rules were

hidden and had to be learnt by trial and error as this example from the research journal illustrates;

> Two days in and I've messed it up. I had meeting with Oliver (one of the surgeons) in the doctors' room today. We talked about some possible research. The nurses were so cold when I came back out into their tearoom I felt like had been conversing with the enemy. The odd thing is they like him, he is one of their favourites. What I have learnt is that when I am here to observe them, I have to be with them, be totally focused on them and not appear to put a doctor ahead of them (Research journal).

The research journal was invaluable in learning the rules. It provided a place to write down and work out where errors of judgment had been made or could potentially be made.

Access was also dependent upon being able to respond quickly and appropriately to unexpected and unfamiliar events. As Lipson observes ethnographic researchers '… need a high tolerance for ambiguity and uncertainty and must be able to respond well to culture shock (Lipson 1991 p.81)'. For example, while learning where to stand, how to avoid contaminating anything or anyone and seeing, hearing and smelling the sometimes distressing sights, sounds and smells of the OR, responding appropriately was critical to the continuation of fieldwork for this study. There was however one event that went counter to this expectation with very positive results.

> Today I passed the strangest rite of passage. I fainted, very publicly and for no apparent reason. I had left the theatre and was listening to a nurse as she patiently explained an activity which I had found interesting, but had not understood. The concern expressed by the nurses was emphasised by their eagerness to tell me their own fainting stories. They assured me that I was normal, 'everybody does it, we all have'. For whatever reason fainting has brought me closer to the nurses. Perhaps it has something to do with being vulnerable and fallible and therefore non-threatening but I am unsure (Research journal).

This extract demonstrates the idiosyncratic nature of access, for while fainting is not desirable behaviour, it is accepted as normal within the area. Fieldwork was like walking on a knife edge because there was often tension between conflicting agendas. Gathering the data in a way that reflected the day-to-day activities of the

nurses was sometimes at odds with the strategies needed to maintain access to the culture.

This tension was felt acutely in the attempts to balance the observation and participation roles. While observation was required in order to collect data, participation was an excellent avenue for maintaining access as the following extract demonstrates;

> A large number of staff, including the aides, were away sick today. The nurses were extremely busy and only just tolerating having an observer in the room. There was no friendly talk, no contact and the theatre felt on edge. Although the lack of staff was apparent, the consulting surgeon loudly voiced his displeasure at the longer than normal changeover times. Pacing the corridor outside the theatre, thrusting his head through the theatre door at frequent intervals to glare at the nursing staff, his impatient outbursts contributed to the tension as clean up and preparation were taking place. One of the harder things for me about observation is that there is no way to expend physical energy and as tensions rise in the theatre, as they most certainly did today, so too does the need to use up nervous energy. I grabbed a mop and helped clean up. The effect was unexpected and frankly miraculous. The three nurses relaxed and began talking as we cleaned up together and I was able to ask them about some of the things that I had observed (Research journal).

Striking a balance between observer and participant roles involved more than a reiteration of the purpose of observation, it meant clearly defining what role was being played by the researcher at the time. The roles of clinician, friend and researcher were interwoven throughout the fieldwork and each of the roles was important to its success. While the role of researcher was central, the other two roles, while at times confusing the issue, contributed to gaining and maintaining access and have made an ongoing commitment to the setting possible.

Presentation of self as researcher

The problems associated with the role of clinician have already been discussed and center upon the tension between acting clinically and changing what is being observed. The issues associated with being a friend also demanded judgments and decisions to be made. Friendly conversation and relationships contributed strongly to the success of the fieldwork. They also had the potential to disrupt it. The overt

expectations expressed by some nurses that 'good things' would be written about them stemmed from this relationship and was overcome as previously discussed. Friendliness also invited interruption and so the purpose of an observation had to be reiterated at times to prevent this from occurring. Possibly the most significant problem associated with friendship is that of over-rapport as described by Miller (1969) in which it becomes hard to write about issues that reflect poorly on the participants. It is closely related to the problem of 'going native' a phrase that describes the researcher's uncritical adoption of cultural beliefs and values (Shaffir & Stebbins 1991 p.14). The potential for these problems was managed by encouraging open discussion about the study at work-in progress meetings. In this way issues such as the way in which the nurses understood 'advocacy' could be debated and diffused. The reflective journal was very helpful in identifying risks associated with 'going native' as it encouraged critical self-questioning.

Directing and concluding the fieldwork

As familiarity with the culture grew, the initial broad focus was tempered by the patterns that emerged from the data, the focus sharpening as the fieldwork progressed. This selection of the principal areas of interest was an integral component of data collection and analysis as it is in all ethnographic work (Honigmann 1982). It is because of this process that the ethnography (in common with all ethnographic work) could not capture the entirety of the culture. The process of deciding which 'leads' to follow and which to ignore was challenging as the possible choices were initially overwhelming. As fieldwork progressed and the cultural patterns began to assert themselves, promising avenues of inquiry became clearer. In determining these, the interviews (both formal and informal) with the registered nurses were valuable. They indicated whether or not developing lines of inquiry were recognizable to them and if they were not then the data was re-searched, further observations were made and the decision to include or exclude ideas was then made. The hermeneutic nature of the project was clearly reflected here and served as a reassuring guide. As Gadamer advises '… a horizon is not a rigid boundary but something that moves with one and invites one to advance further, (Gadamer 1975, p.245).

Originating from within this invitation to advance further is the problem of when to stop. Unlike the culture that continues on, the data collection, its analysis and the ethnography must be directed and must come to an end. In order for this to happen the research journey was planned and the potential direction it would take was established. As with any ethnographic research, the approach to the fieldwork in this study was both flexible and responsive to the emerging findings (Burgess 1982). As Whyte writes,

> *At the outset, we did not know what we were looking for. We did not enter the field with blank minds, yet our original formulations proved to have little relation to the studies that eventually evolved. We set out on the frontiers of our personal knowledge and began exploring beyond those frontiers* (Whyte 1984).

These pre-understandings ('the frontiers of our personal knowledge') are an essential part of hermeneutic inquiry and serve to demonstrate that the researcher is not a cultural naïf (Walsh 1996) even though the final research problem may not be discovered until well into the research itself (Schatzman & Strauss 1973 p.3) The researcher is not an unknowing adventurer into completely foreign territory but, as in the case of this study, already has some idea of what is being sought. Thus this study avoided pre-judgment of the nature of the problem (Shaffir & Stebbins 1991 p.18).

The judgment guiding the decision to conclude data collection and analysis (including the authoring of the ethnography) was informed by Gadamer's assertion that '… the harmony of all the details with the whole is the criterion of correct understanding. The failure to achieve this harmony means that understanding has failed' (Gadamer 1975 p.291). Data saturation evidenced by the repetition of acts, agreement with and within interview statements and the development of the layers of the ethnography and the familiarity they held for the nurses reading them indicated that this had been achieved.

Appendix VIII ACORN definitions and criteria for the formal OR nurse roles

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THE REGISTERED NURSE AS ANAETHETIC NURSE

ACORN believes that the role of the anaesthetic registered nurse is an integral part of perioperative nursing practice.

ACORN acknowledges and upholds the patient's rights to the highest quality of nursing care during surgical intervention. This is achieved by the registered nurse performing the role of the anaesthetic registered nurse and complying with standards of practice for perioperative nursing.

The patient's surgical outcome is influenced by the competence, knowledge and skill of the anaesthetic registered nurse.

This standard is to be used in conjunction with appropriate ACORN standards for:
Aseptic technique

- Counting of Accountable Items Used During Surgery
- Disposal of Surgically removed Human Tissue and Explanted Items
- Reprocessing of Reusable Items: Cleaning, Packing, Sterilisation and Storage of Sterile Supplies
- Surgical Scrubbing, Gowning and Gloving.

STANDARD 1
The registered nurse shall demonstrate competence to perform the role of anaesthetic registered nurse.

The anaesthetic registered nurse is appropriately educated and demonstrates the application of knowledge on scientific and nursing principles.

Criteria

This knowledge shall include the following:
1.1   principles of anaesthesia;
1.2   perioperative nursing practice standards;
1.3   principles of aseptic technique;
1.4   anatomy and physiology;
1.5   knowledge of surgical and anaesthetic procedures to be performed;

1.6 equipment required for anaesthetic procedures;

1.7 infection control principles;

1.8 care, cleaning and maintenance of anaesthetic equipment;

1.9 resource management;

1.10 medico-legal requirements; and

1.11 waste management.

STANDARD 2

A systematic and planned approach shall be applied to activities undertaken by the anaesthetic registered nurse in order to meet the needs of individual patients.

Criteria

The anaesthetic registered nurse shall:

2.1 check that all anaesthesia equipment and supplies required for anaesthesia are available and functional;

2.2 confirm patient identification to ensure patient safety;

2.3 assist with the patient's transfer and positioning for surgery;

2.4 anticipate the needs of the anaesthetist during the procedure;

2.5 act as the patient's advocate;

2.6 function as a member of the multidisciplinary team; and

2.7 appropriately document care provided.

STANDARD 3

A designated anaesthetic registered nurse shall be assigned to each operating room.

Criteria

The anaesthetic registered nurse shall support the multidisciplinary team by:

3.1 not routinely undertaking the duties of other operating room personnel in addition to the designated role

3.2 anticipating and meeting their requirements;

3.3 working in a collaborative manner;

3.4 assisting to achieve optimal patient outcomes; and

3.5 by remaining under the immediate direction of the anaesthetist.

STANDARD 4

Perioperative nurses shall maintain accountability for their actions when in the role of anaesthetic registered nurse.

Criteria

The anaesthetic registered nurse shall:

4.1 practise in accordance with current standards;

4.2 be aware of advances and changes in clinical practice and technology;

4.3 practise within an ethical and medico-legal framework; and

4.4 provide dedicated assistance to the anaesthetist.

STANDARD 5

Care of the patient in the anaesthetic area shall be provided by a competent anaesthetic registered nurse.

Criteria

The anaesthetic registered nurse shall:

5.1 be appropriately qualified and educated to manage the care of the preoperative patient;

5.2 be accountable for all aspects of patient care during the immediate preoperative phase; and

5.3 appropriately document nursing care given.

STANDARD 6

The anaesthetic registered nurse shall act as the patient's advocate before and during the period of anaesthesia.

Criteria

The anaesthetic registered nurse shall:

6.1 speak for, and acts on behalf of, the patient;

6.2 respect the patient's right to privacy;

6.3 preserve the patient's dignity; and

6.4 maintain patient confidentiality.

STANDARD 7

The health status of the patient shall be assessed prior to, during and following anaesthesia.

Criteria

The anaesthetic registered nurse shall:

7.1 demonstrate skills in assessment, observation, interviewing, data recording and communication;

7.2 collect data which has direct implications for the safety and well-being of the patient throughout the preoperative, intra-operative, and post-operative periods

7.3 appropriately document data; and

7.4 constantly review practise and implement changes as required in order to provide optimal nursing care.

STANDARD 8

Nursing care associated with the provision of an anaesthetic shall be provided within established guidelines.

Criteria

The anaesthetic registered nurse shall:

8.1 develop a plan of care for the patient;

8.2 ensure the patient is free from harm;

8.3 document nursing care adequately;

8.4 record clinical indicators appropriately;

8.5 function within the unit's established policy; and

8.6 function in accordance with ANZCA guidelines.

STANDARD 9

Patients undergoing all forms of anaesthesia shall be monitored and supported throughout the procedure.

Criteria

The anaesthetic registered nurse shall:

9.1 remain with the patient prior to and during anaesthesia;

9.2 provide appropriate and necessary explanations;

9.3 monitor the patient's physiological and emotional responses and takes appropriate action;

9.4 report adverse patient responses to the anaesthetic/surgical team; and

9.5 appropriately document the patient's response to local anaesthetic agents.

STANDARD 10

Anaesthetic nursing practice and process shall be reviewed and evaluated.

Criteria

The anaesthetic registered nurse shall:

10.1 identify problem areas and formulates strategies to improve patient care;

10.2 communicate results of evaluation studies to appropriate personnel;

10.3 document the evaluation processes; and

10.4 evaluate the effectiveness of corrective actions taken.

ACORN believes that the role of the circulating nurse is an integral part of perioperative nursing practice.

ACORN acknowledges and upholds the patient's right to the highest quality of nursing care during surgical intervention. This is achieved by the registered nurse performing the role of the circulating nurse and complying with standards of practice for perioperative nursing.

The patient's surgical outcome is influenced by the competence, knowledge and skill of the circulating nurse.

This standard is to be used in conjunction with appropriate ACORN Standards for:

- Aseptic Technique
- Counting of Accountable Items Used During Surgery
- Disposal of Surgically Removed Human Tissue and Explanted Items
- Reprocessing of Reusable Items: Cleaning, Packing, Sterilisation and Storage of Sterile Supplies
- Surgical Scrubbing, Gowning and Gloving.

STANDARD 1

The registered nurse shall demonstrate competence to perform the role of circulating nurse.

The circulating nurse demonstrates the application of knowledge based on scientific and nursing principles.

Criteria

This knowledge shall include the following:

1.1   perioperative nursing practice standards;

1.2   principles of aseptic technique;

1.3   anatomy and physiology;

1.4   knowledge of procedures to be performed;

1.5   instrumentation required for the operative procedure;

1.6   infection control principles;

1.7   care, cleaning and maintenance of surgical instruments;

1.8   resource management;

1.9   medico-legal requirements; and

1.10 waste management.

STANDARD 2

A systematic and planned approach shall be applied to activities undertaken by the circulating nurse in order to meet the needs of individual patients.

Criteria

The circulating nurse shall:

2.1   assess the patient preoperatively;

2.2   ensure all equipment required for the procedure is available and functional;

2.3   confirm patient identification and assists in verification of consent;

2.4   assist with patient transfer and positioning for surgery;

2.5   participate in and document the surgical count;

2.6   maintain the sterility and integrity of supplies dispensed to the surgical team;

2.7   monitor and report any breaks of aseptic technique to the surgical team;

2.8   remain vigilant throughout the surgical procedure in order to;

    2.8.1   recognise and respond to the patient's changing condition,

    2.8.2   recognise intra-operative complications and respond appropriately,

    2.8.3   anticipate the needs of the surgical team;

2.9   be familiar with the procedures and policies for reprocessing of reusable instrumentation and equipment in accordance with AS 4187;

2.10 be aware of and adhere to safety requirements and regulations in the operating room in order to prevent injury to patients and the multidisciplinary team;

2.11 document perioperative care in the patient's medical record; and

2.12 function as a member of the multidisciplinary team.

STANDARD 3

The designated circulating nurse shall be asigned to each operating room.

Criteria

The circulating nurse shall support the multidisciplinary team by:

3.1 anticipating and meeting their requirements;

3.2 working in a collaborative manner;

3.3 assisting to achieve optimal patient outcomes; and

3.4 not routinely undertaking the duties of other operating room personnel in addition to the designated role.

STANDARD 4

Perioperative nurses shall maintain accountability for their actions when in the role of circulating nurse.

Criteria

The circulating nurse shall:

4.1 practice in accordance with current standards;

4.2 be aware of advances and changes in clinical practice and technology; and

4.3 practice within an ethical and medico-legal framework.

STANDARD 5

The circulating nurse shall act as the patient's advocate during the period of surgery.

Criteria

The circulating nurse shall:

5.1 speak for, and act on behalf of, the patient;

5.2 respect the patient's right to privacy;

5.3 preserve the patient's dignity; and

5.4 maintain patient confidentiality.

STANDARD 6

Nursing care associated within the provision of surgery shall be provided within established guidelines.

Criteria

The circulating nurse shall:

6.1 develop a plan of care for the patient;

6.2 ensure the patient is free from harm;

6.3 document nursing care adequately;

6.4 record clinical indicators appropriately; and

6.5 function within the health care facility's established policy.

STANDARD 7

Perioperative nursing practice and process shall be reviewed and evaluated.

Criteria

The circulating nurse shall:

7.1 identify problem areas and formulate strategies to improve patient care;

7.2 communicate results of evaluation studies to appropriate personnel;

7.3 document the evaluation processes; and

7.4 evaluate the effectiveness of corrective actions taken.

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THE REGISTERED NURSE AS INSTRUMENT NURSE

ACORN believes that the role of the instrument nurse is an integral part of perioperative nursing practice.

ACORN acknowledges and upholds the patient's right to the highest quality of nursing care during surgical intervention. This is achieved by the registered nurse performing the role of the instrument nurse and complying with standards of practice for perioperative nursing.

The patient's surgical outcome is influenced by the competence, knowledge and skill of the instrument nurse.

This standard is to be used in conjunction with appropriate ACORN Standards for:

- Aseptic Technique
- Counting of Accountable Items Used During Surgery
- Disposal of Surgically Removed Human Tissue and Explanted Items
- Reprocessing of Reusable Items: Cleaning, Packing, Sterilisation and Storage of Sterile Supplies
- Surgical Scrubbing, Gowning and Gloving.

STANDARD 1
The registered nurse shall demonstrate competence to perform the role of instrument nurse.

The instrument nurse demonstrates the application of knowledge based on scientific and nursing principles.

Criteria

This knowledge shall include the following:

1.1   perioperative nursing practice standards;

1.2   principles of aseptic technique;

1.3   anatomy and physiology;

1.4   knowledge of procedures to be performed;

1.5   instrumentation required for the operative procedure;

1.6   infection control principles;

1.7   care, cleaning and maintenance of surgical instruments;

1.8   resource management;

1.9   medico-legal requirements; and

1.10   waste management.

STANDARD 2

A systematic and planned approach shall be applied to activities undertaken by the instrument nurse in order to meet the needs of individual patients.

Criteria

The instrument nurse shall:

2.1   confirm patient identification to ensure patient safety;

2.2   check that all equipment, instruments and sterile supplies required for the procedure are available and functional;

2.3   monitor the patient's transfer and positioning for surgery;

2.4   undertake the sterile set-up **immediately prior** to the commencement of procedure;

2.5   perform the surgical count with the circulating nurse;

2.6   anticipate the needs of the surgical team during the procedure;

2.7   report any break of aseptic technique and initiates corrective action;

2.8   be aware of and adhere to safety requrements and regulations in the operating room in order to prevent injury to patients and the multidisciplinary team; and

2.9   function as a member of the multidisciplinary team.

STANDARD 3

The instrument nurse shall not act simultaneously as the assistant to the surgeon in cases where a body cavity is opened.

Criteria

The instrument nurse shall support the surgical team by:

3.1   anticipating and meeting their requirements;

3.2 working in a collaborative manner;

3.3 assisting to achieve optimal patient outcomes; and

3.4 not routinely undertaking the duties of other operating room personnel in addition to the designated role.

STANDARD 4

Perioperative nurses shall maintain accountability for their actions when in the role of instrument nurse.

Criteria

The instrument nurse shall:

4.1 practise in accordance with current standards;

4.2 be aware of advances and changes in clinical practice and technology; and

4.3 practise within an ethical and medico-legal framework.

STANDARD 5

The instrument nurse shall act as the patient's advocate during the period of surgery.

Criteria

The instrument nurse shall:

5.1 speak for, and act on behalf of, the patient;

5.2 respect the patient's right to privacy;

5.3 preserve the patient's dignity; and

5.4 maintain patient confidentiality.

STANDARD 6

Nursing care associated with the provision of surgery shall be provided within established guidelines.

Criteria

The instrument nurse shall:

6.1 develop a plan of care for the patient;

6.2 ensure the patient is free from harm;

6.3 document nursing care adequately;

6.4 record clinical indicators appropriately; and

6.5 function within the health care facility's established policy.

STANDARD 7

Perioperative nursing practice and process shall be reviewed and evaluated.

Criteria

The instrument nurse shall:

7.1 identify problem areas and formulate strategies to improve patient care;

7.2 communicate results of evaluation studies to appropriate personnel;

7.3 document the evaluation processes; and

7.4 evaluate the effectiveness of corrective actions taken.

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The Post-Anaesthetic care nurse is a registered nurse who has specialised in the nursing care of patients following an anaesthetic, surgery or any procedure that has the potential to produce life threatening complications.

ACORN believes that the role of the Post-Anaesthetic care nurse is an integral part of perioperative nursing practice.

ACORN acknowledges and upholds the patient's right to the highest quality of nursing care when recovering a patient following surgical intervention. This is achieved by the Registered Nurse performing the role of the Post-Anaesthetic care nurse and complying with standards of practice for perioperative nursing.

The patient's perioperative outcome is influenced by the competence (defined as the knowledge, skills and attitudes) of the Post-Anaesthetic care nurse.

Care of the patient in the immediate post-surgical, post-anaesthetic, post procedural period requires a distinct set of nursing skills and knowledge.

The Registered Nurse as a Post-Anaesthetic Care Nurse standards are to be used in conjunction with all other ACORN Standards.

STANDARD 1

The Registered Nurse shall demonstrate competence in caring for post-anaesthetic, post surgical and post procedural patients.

Criteria

The Post-Anaesthetic care nurse shall demonstrate competence in the following areas:

1.1 airway management assessment and techniques;

1.2 patient resuscitation techniques;

1.3 pain management;

1.4 patient temperature control management;

1.5 patient nausea and vomiting management;

1.6 patient assessment and management of post-anaesthetic, post surgical and post procedural life threatening complications;

1.7 anaesthetic types and anaesthetic pharmacology;

1.8   perioperative nursing practice standards;

1.9   principles of aseptic technique;

1.10   anatomy and physiology;

1.11   knowledge of procedures to be performed;

1.12   infection control principles and post-anaesthetic care unit practices;

1.13   resource management;

1.14   medico-legal requirements;

1.15   waste management; and

1.16   recovery patient monitoring and resuscitation equipment.

STANDARD 2

Care of the patient in the post-anaesthetic care unit shall be provided by or directly supervised by a competent Post-Anaesthetic care nurse.

Criteria

The competent Post-Anaesthetic care nurse shall:

2.1   be appropriately qualified, trained and tested to manage the care of the post surgical, post-anaesthetic, post procedural patient; and

2.2   be accountable for all aspects of patient care during the immediate post-anaesthetic phase.

Example: Post-anaesthetic nursing care of paediatric patients shall be managed by appropriately qualified and trained Post-Anaesthetic care Registered Nurses.

STANDARD 3

A systematic and planned approach shall be applied to activities undertaken by the Post-Anaesthetic care nurse in order to meet the needs of individual patients.

The Post-Anaesthetic care nurse shall:

3.1   have policies and procedures in place to ensure that all equipment required for patient monitoring and resuscitation are available and functional;

3.2   receive a comprehensive verbal handover from the anaesthetic or OR nurse and medical staff involved in the patients intraoperative care;

3.3   ensure an appropriate patient identification process is enacted;

3.4　monitor and respond to the needs of the patient;

3.5　provide a comprehensive record of the recovery episode which shall be included in the patient's medical record;

3.6　act as the patient's advocate;

3.7　function as a member of the perioperative team;

3.8　provide continuity of care by facilitating a comprehensive verbal handover to the appropriate nurse caring for the patient in the ward; and

3.9　have a written post-anaesthetic unit admission and discharge policy.

STANDARD 4

Perioperative nurses shall maintain accountability for their actions when in the role of Post-Anaesthetic care nurse and shall be accountable to the competent Post-Anaesthetic care nurse.

Criteria

The Post-Anaesthetic care unit nurse shall, where practical:

4.1　practice in accordance with current standards;

4.2　be aware of advances and changes in clinical practice and technology; and

4.3　practice within an ethical and medico-legal framework.

STANDARD 5

The Post-Anaesthetic care nurse shall act as the patient's advocate during their period in the post-anaesthetic care unit.

Criteria

The Post-Anaesthetic care nurse shall:

5.1　speak for, and act on behalf of, the patient;

5.2　respect the patient's right to privacy;

5.3　preserve the patient's dignity; and

5.4　maintain patient confidentiality.

STANDARD 6

Nursing care provided in the post-anaesthetic care unit shall be within established guidelines.

Criteria

The Post-Anaesthetic care nurse shall:

6.1　ensure the patient has a safe and uneventful recovery stay;

6.2　document nursing care adequately;

6.3　function within the health care facility's established policy; and

6.4　utilise appropriate clinical judgement in facilitating nursing care outcomes.

STANDARD 7

Post-anaesthetic care nursing practice and processes shall be reviewed and evaluated.

Criteria

The Post-Anaesthetic care nurse shall:

7.1　identify problem areas and formulate strategies to improve patient care;

7.2　measure appropriate outcomes of post anaesthetic nursing practice;

7.3　communicate results of outcome studies to appropriate personnel;

7.4　document the evaluation processes; and

7.5　evaluate the effectiveness of corrective actions taken.

STANDARD 8

The post-anaesthetic patient is cared for in an appropriately planned, safe environment.

Criteria

The post-anaesthetic care unit shall:

8.1　be an open area, providing maximum patient observation from all places within the patient stay area;

8.2　meet or exceed the current lighting standards for the minimum lux values for health care facility's acute care areas;

8.3 be painted so that the reflected light colour from the walls and furniture surfaces do not change the actual colour of the recovery patients skin;

8.4 receive regular, appropriate occupational health and safety survey inspections; and

8.5 have a written record of the outcomes of a regular equipment maintenance program.

STANDARD 9

The post-anaesthetic care unit shall be appropriately resourced to meet the requirements of the post surgical, post-anaesthetic and post procedural patient.

Criteria

9.1 Nursing staff shall be, as a minimum:

9.1.1 1:1 nurse patient ratio in an unrousable patient;

9.1.2 1:3 nurse patient ratio maximum for awake, stable, uncomplicated patients;

9.1.3 two nurses in the post-anaesthetic care unit when a patient is present; and

9.1.4 an appropriately competent registered nurse, having undergone formal post-anaesthetic care training, in charge of the unit.

9.2 A competent post-anaesthetic care unit registered nurse while caring for a patient, may also supervise one nurse in training, providing neither patient has complications.

9.3 Appropriate equipment for recovering a patient, monitoring patient progress, patient complications and for resuscitation, shall be available when required.

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314

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316

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