

# **Fear, performance and power: A study of simulation learning in paramedic education.**

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## **ABSTRACT**

Simulation or scenario learning is an integral part of student paramedic development and, despite the increasing amount of paramedic research, very little is known about how students and tutors experience it. Current literature regards simulation as invaluable without exploring why this may be the case and this study aims to address this.

This is a compressed time mode ethnographic approach study that incorporates data from student paramedics during and immediately after simulation learning events and tutor views of facilitating the simulation experience. This, along with a comprehensive literature review, provides an overview of simulation in the student paramedic development pathway.

This thesis exposes how student paramedics find the simulation process anxiety provoking and explores the many reasons for this. The performance aspect of scenarios is echoed in the dramaturgical language used when talking about simulation learning events and the similarities between simulation learning events and simulation assessment events merely adds to this stress. Using the lens of critical pedagogy, issues of power (control and hierarchy) within the educational and organisational structures are examined and offered as another possible explanation for the high levels of anxiety in simulation learning. The thesis ends with the question of whether simulation learning can be changed for the better and if so, how.

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## CHAPTER ONE – OVERVIEW OF THE STUDY

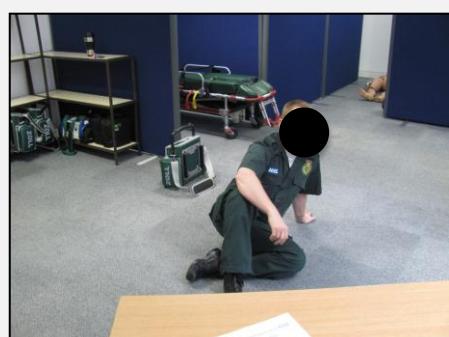
### EXAMPLE SIMULATION LAYOUT

A large classroom with tables and chairs pushed to the edge of the room. In the centre, the simulated patient sits on the chair in the middle of the room. The tutor sits at the desk, with pen and paper in front of him, on which he will make notes on the simulation.



The student is called in by the tutor and told that he is attending an elderly female with chest pain. He is told to treat the simulated patient as he would a real patient.

The student approaches the simulated patient and pretends to assess and treat the patient, telling the tutor what he would do. He obtains information about the illness from both the 'patient' and tutor.



The tutor ends the simulation and gives the student feedback. The student then leaves the room.

### **EXAMPLE SIMULATION DESCRIPTION**

*Alan is a student paramedic on a course in an ambulance education centre. He is employed by the ambulance service; he must complete this course to progress and become a registered paramedic. An ambulance educator called Zach facilitates the simulation. Zach is a tutor at the centre and a qualified paramedic who will have taken this course.*

*The simulation room is a classroom with a simulated patient, Bryony, who is another student on the same course as Alan. Bryony is pretending to have the illness or injury that Zach wants Alan to treat. Zach has briefed Bryony on what is ‘wrong’ with her (that she is to pretend to be having a heart attack) and tells her how she should react in this situation. Zach calls Alan into the classroom.*

*Only Alan, Zach and Bryony are in the room. Bryony is sitting on a chair pretending to be ill and Zach is sitting behind a desk taking notes. Alan does not know beforehand what illness or injury Bryony is supposed to have. It is only when Alan comes through the door and Zach tells him that he is attending an elderly female with crushing central chest pain that Alan has some information regarding the simulation.*

*Alan approaches Bryony as he would if he were actually tending to a patient. He kneels in front of her and introduces himself; he asks Bryony what the problem is. Bryony gives the answers that would be expected of someone having a cardiac episode. Alan pretends to take a pulse on Bryony and asks Zach what the pulse rate is for this patient. Alan pretends to give Bryony the treatments needed, both pharmacological and invasive (drugs, needles etc.) but speaks to Bryony as he would to a patient. He obtains consent and informs Bryony in layterms what he is doing and why.*

*Alan tells Zach that he would now move the patient to the back of the ambulance and drive to the hospital. Zach tells Alan that he can now pretend he is in the back of an ambulance although neither Alan nor Bryony has moved. Alan continues to pretend to treat Bryony and after a couple of minutes Zach tells Alan that he has arrived at hospital. Zach tells Alan that the simulation is over and Alan sits on the floor whilst Zach reads from his notes, giving feedback to Alan. Occasionally Alan speaks to agree with Zach but Bryony does not talk at all.*

*Zach thanks Alan and tells him to leave the room.*

## **1.1 INTRODUCTION**

This thesis explores aspects of simulation learning in paramedic education. The idea for this research was generated many years ago during my own course of study to become a paramedic, when most of my peers and I expressed some anxiety before and during the simulation experience. Since then, as a qualified paramedic undertaking simulation as part of my continuous professional development and then as a tutor, facilitating others in the simulation setting, my curiosity regarding simulation has grown. However, my curiosity has grown as my anxiety has reduced and I consider simulation to be a useful learning and assessment tool.

Paramedic research tends to focus on clinical matters. I hope that this study will help to balance this by allowing the paramedic profession and wider medical education community to reflect more on aspects of student and tutor experience and attitudes to simulation learning. Data from student and tutor experience of simulation were obtained, these data were analysed and alterations to the simulation event are suggested. It became apparent when exploring existing evidence, that there are significant gaps in literature regarding the student and tutor experience of simulation learning. This study goes some way to filling these gaps. The theoretical assumption of this study is that all human interaction can be observed and its meaning interpreted and that social cultures can be identified and analysed. Accordingly, concepts from several branches of the social sciences, including anthropology and psychology, appear throughout this study.

### **1.1.1 Simulation**

The word simulation, from the Latin word *simulare*, means imitate and may be defined as “a method of representing the actions of one system by those of another, as a computer programme that represents the actions of something in the real world” (Mosby, 2002, p. 1585). This is the use of an alternative to represent an actual ideal. In student paramedic education, simulation is likely to be a fabricated scenario in which to practise in real time, most likely using a mannequin (either high fidelity or low fidelity) or a person acting the part of a sick or injured patient. Obviously simulation involving aggressive and potentially harmful interventions, such as chest compressions or intravenous drug administration, would involve a mannequin. Some simulations require complex questioning and answers and for these situations, a real person who can interact with the student is most often used. However, there has been an increase in the use of high fidelity mannequins and these can simulate heart, lung and bowel sounds and even answer with a limited vocabulary when

prompted by an operator (Laerdal, 2006). They are most often used for advanced treatments and are comparatively expensive. This alternate of computer programme or high functioning mannequin, although technologically advanced, is obviously still not as complex as a human being. Therefore, mannequins tend to be used to simulate the sickest and most obtund patients. The patients that are generally simulated by a mannequin are the ones that do not speak and have limited movement and physiological parameters.

It is important and a necessary preliminary to briefly explore the terms used to describe simulation, as it appears the terms simulation and scenario are sometimes used interchangeably. Although the term simulation is used in much of the evidence in this study, there is some use of the word scenario and this is the term used in the ambulance environment in which I work. In this study, the term simulation will be used to avoid confusion, except where the literature reviewed specifically mentioned the term scenario when discussing ambulance use or when participants used this term. There is no literature that has explored a possible difference between the two words and it is common for these terms to be used to mean the same thing, namely simulation.

### **1.1.2 Literature overview and exclusions**

Although there has been some paramedic simulation research carried out, much literature comes from the broader medical education community. In addition, the greater part of the literature on paramedic simulation tends to be quantitative in nature. These studies tend to focus on questions such as how well the paramedic performs during simulation, whether they put needles in arms effectively, tubes in throats in an appropriate way, save mannequins' lives. It is important to note that the use of the term perform, in the context of the literature overview, has a different focus than the performance aspects discussed in this study. However, there appears to be very little research on the affective aspects of simulation; in other words, how paramedics feel about this kind of experiential learning.

Few analysed thematic studies ask the student paramedic and tutor about their experience of the simulation event, beyond whether they liked it or not. Little opportunity is given for the student or tutor to explore attitudes they may have to simulation, with no opportunity at all to then consider implications of these themes and relate them to practice. Perhaps this is because most evidence on people's experience of simulation tends to use simple Likert-type scale questionnaires, without the participants being able to expand on their feelings and thoughts. This tends to produce evidence

that states that a participant either likes or dislikes simulation and how much they like or dislike simulation according to numerical indicators. As will be explored further in chapter two, there are many articles based on these parameters and how well a participant carries out a motor skill on a mannequin. This evidence will not form part of the literature review of this thesis except where specific concepts, elsewhere in the research published, are pertinent to this study.

## **1.2 A BRIEF HISTORY OF PARAMEDICINE**

### **1.2.1 Earliest origins of paramedicine**

Paramedicine as a profession is comparatively new, although its principles have been in place for millennia. The Biblical Good Samaritan (Luke, 10: 30-35) providing medical and transport aid to the assaulted man highlighted the compassion and care that people could show. However, the more formalised system of giving care to the injured arose out of military necessity. Barkley (1979) suggested that it was a Napoleonic war surgeon called Dominique-Jean Larrey who first developed an organised system of sorting: a) those who were most injured but likely to survive if promptly treated, from b) those with lesser injuries and c) those who were likely to die. This was to ensure that those who might survive would receive treatment first, although this was not entirely for altruistic reasons. The early treatment of those most likely to survive ensured that soldiers could be returned to action as promptly as possible. Prior to this, men wounded in action would remain where they fell until after the fighting had ceased or there was a lull in the battle. The injured would either receive rudimentary dressing in the field or often no medical support at all. Medical care was fairly basic and both penetrating and blunt trauma (which still make up the majority of wounds in combat) are difficult to treat, even with modern advancements in medicine. In the unsterile and unsafe areas in which battles tend to be fought, death was almost a certainty following most major trauma injuries. As late as World War One, men died routinely from seemingly survivable injuries such as blast and shrapnel wounds to the femur (Jones, 1914). This is an injury that most in the European medical community would consider survivable, given basic treatment measures. It is not just systematic ambulance provision that owes its conception to the military, many other seemingly diverse medical advancements can be traced to the armed services, such as the treatment of some tropical diseases, mass vaccination and even wound closure glues.

The provision of basic treatment based on who was most likely to survive and moving these patients to care after stabilising them, is what proved the most innovative advancement in the system Larrey

used. Of course there may have been similar techniques prior to this but Larrey was the first to use this idea in a systematic (and more importantly, noted) way. The concept of triage, where it is not necessarily the most gravely injured who receive immediate care and where those that have a better chance of surviving are treated first, still provokes some discussion and possible general discomfort in the public. Some recent incidents, such as the July 2005 London bombings, have highlighted issues of prioritising patients in triage practice and the need to adequately sort those patients most likely to survive using accepted triage systems (Aylwin et al., 2006).

Larrey's system of initial sorting (or triage) and then using a horse-drawn ambulance to transport to more advanced care, was first used in 1793 and rapidly became a mainstay of battlefield and then civilian medicine. However, for the next century and a half up to the 1960s, ambulance drivers provided limited first aid and were regarded as transporters of patients to care rather than care providers themselves. The basic first aid certification required by these drivers (the title reflecting their main role) was limited to perfunctory training and token competency assessment.

### **1.2.2 Significant changes in paramedicine in the United Kingdom**

In the 1960s, a government paper commonly called the Millar Report was published. It changed ambulance services in the United Kingdom (UK) as it suggested that a correlation could be found between ambulance staff training and patient outcome. It argued that to improve death rates from out-of-hospital illness and injury, greater emphasis on the development of ambulance staff was needed (Ministry of Health, 1966). This led to the development of a nationally standardised course of study several weeks in length, under a central National Health Service Training Department. After successful completion, an ambulance man (a clear indication of the gender profile of staff) was entitled to wear a Millar badge. This Millar badge, which is still used by some ambulance services even though the Millar qualification no longer exists, is shown in figure 1.1.

*Figure 1.1 – Millar badge worn by qualified ambulance staff.*



At the same time, the work in Northern Ireland of Pantridge and Geddes (1967) showed that previously always-fatal sudden cardiac arrest might have successful definitive treatment (the management being direct shock defibrillation). Since the 1960s, skills and knowledge of ambulance staff have developed beyond most early expectations with most texts of the time suggesting that ambulance staff would only have an impact on a fairly small number of illnesses and injuries. This can be observed in a wide range of medical research that has concentrated on a particular disease or injury and suggested that out-of-hospital care could improve morbidity and mortality. This has proved the case with: coronary heart disease, stroke, spinal injuries, asthma, chronic obstructive airways disease, cardiac arrest and obstetric emergencies.

### **1.2.3 Modern paramedicine**

In the decades since the Millar Report, there has been a change in ethos in emergency care from the transport capabilities of the ambulance driver to the practitioner of the new millennium. The ability to problem-solve and directly influence the care pathway of a patient has necessitated a change in education processes. Perhaps the most significant changes in paramedicine in recent years have been registration of the profession and the closing of the paramedic title. Anyone found using the title of paramedic but not registered, risks prosecution and a fine of up to £5,000 (HPC, 2011). A greater exploration of the nature of paramedic registration is found in chapter four of this study.

There is no doubt that paramedicine has evolved from a transport service delivering simple aid to the registered autonomous practitioners of today but it should be noted that any concept of autonomy may be relative. All ambulance services in the UK use national guidelines which, although less restrictive than previous protocol-driven practices, still provides a relatively inflexible framework in which to treat patients (JRCALC and ASA, 2006). This issue is explored further in chapter seven, as is the fundamental position of the paramedic who is required to maintain a structured place within the order of the organisation. This change in paramedic development has meant more of a focus on the pedagogy of paramedicine, which is of course to be welcomed, although there are relatively few paramedic academics researching learning theory.

### **1.3 THE THESIS STATEMENT**

This thesis statement is intended to show my position for this study, based on a single concept that has emerged from analysis of the data. This statement was written at the conclusion of data analysis, having emerged as a theme based on the research questions.

***The student paramedic feels anxious about simulation.***

The thesis statement is based on the findings generated from the research questions as outlined below. Although on initial review I felt this statement to be self-evident, it contradicts some existing literature and provides a foundation on which to explore *why* the student paramedic feels anxious about simulation.

#### **1.3.1 The research questions**

The initial discussions that arose from my own feelings and observations of simulation (as part of my role) led to a number of research issues. Research question one was fundamental to this study; simulation has been regarded as essential but with no consensus on why this might be the case. Research questions two and three were then generated from the initial analysis of question one.

##### ***i. Why is simulation perceived to be invaluable for paramedic education?***

This question arose from the seemingly pervasive attitude in the ambulance community that simulation is invaluable for paramedic education, without any evidence to suggest reasons why. My own informal questioning of students and staff met with shrugged shoulders and non-committal answers as to why both those that took part *and* those who facilitated simulation felt that scenarios were such an integral part of student paramedic development. This question is answered throughout the study, related to current literature in chapter two and addressed in chapter eight.

##### ***ii. What is the student and tutor experience of simulation learning opportunities?***

Little evidence is available allowing both the student paramedic and tutor a ‘voice’. So few published studies examine experience and attitudes and collect and analyse and explore these data in depth. I was aware prior to undertaking this study that there was some literature on paramedic simulation but knew

of none that went beyond assessing clinical skills. The data regarding this question are embedded throughout this study in all chapters and current literature regarding this question is evaluated in chapter two.

***iii. What modifications or alterations to simulation learning can be suggested by this study?***

This final research question is the one that I was most focussed on at the beginning of this study. To complete this thesis without being able to provide pragmatic suggestions for current practice seemed unthinkable. Of course as this study has progressed, I have realised that to fulfil the criteria of this aim, questions one and two required analysing in great detail.

The first research question, which asks why simulation is perceived to be invaluable in paramedic education, is examined at length in chapter two. The second question seeks to explore the student and tutor experience of simulation. It is viewed in terms of current literature in chapter two and then explored throughout the rest of the thesis; with student and tutor data threaded throughout chapters five, six and seven. The final research question, which seeks to suggest modifications or alterations to the simulation experience, is explored in the final chapter of this study. The research questions generated the collection of data and these data generated several themes that were placed under three key headings. A detailed exploration of these themes and headings is shown in chapter three. However, the fundamental finding generated from the data is as noted in the thesis statement, the student paramedic feels anxious about the simulation experience. I would suggest the data show this is for several reasons and these theories (and the justification for them) are embedded throughout the chapters.

## **1.4 CONTEXT AND STRUCTURE OF THE STUDY**

### **1.4.1 National and global context**

In the UK there are fifteen National Health Service (NHS) ambulance services, these are split into geographic areas based on county, area or country (see appendix A). In these fifteen ambulance services, there are many different ways to achieve paramedic status. These pathways can be vocational, higher education or a mixture of both but all share similar development tools. Vocational pathways tend to be via an apprenticeship-type model where students are employed by an ambulance service and learn 'on the job'. Student paramedics following higher education pathways,

typically diploma of higher education, foundation degree or bachelor-level degree courses, are not employed. They are full-time students enrolled and affiliated with a university but undertake periodic ambulance service placements.

Regardless of which pathway is used, simulation is widely used as a learning and/or assessment tool. All ambulance services in the UK use simulation throughout the development of the student paramedic. Simulation as a learning and assessment tool is also widely used in health systems and paramedic development pathways across Western Europe, the United States of America and Australasia. This study reviews literature from national and global sources and from many types of student paramedic courses both vocational and mixed vocational and academic pathways over several ambulance education centres and services. An education centre is a building, usually placed centrally in an ambulance region away from most students' base station and home address. The centre becomes the student's place of work for the duration of a course.

#### **1.4.2 Simulation in the course of study**

Regardless of which development pathway(s) an ambulance service makes use of, simulations are used as part of an entire course strategy. This includes practical and theoretical learning and assessments applied both formatively and summatively. Simulation typically makes up nearly one-half of total course time and some simulation assessment *must* be passed successfully to progress. This relationship between simulation learning and simulation assessment is complex and is explored further in later chapters of this study.

In some cases, termination of employment occurs when a student paramedic fails to pass assessments associated with a course of study. The following is typical of the type of contractual obligation for student paramedics:

In order to progress through the ... course, and, therefore, secure your continued employment with the Trust, you must successfully complete all assignments, assessments and examinations undertaken throughout the period of the ... pathway. If all or any of the ... elements have not been met then your employment may be at risk of being terminated.

(East of England Ambulance Service NHS Trust, 2008)

This requirement has implications when discussing simulation as an assessment tool. The danger of termination of employment informs the learning relationship between student and organisation and

gives context to student paramedic concern regarding simulation learning. I would suggest a relationship between simulation learning and simulation assessment reflects a relationship between failure of the simulation and a termination of contract. As discussed in chapter four and to some extent in later chapters, there are numerous ambulance assessments (both written and practical) but none seem to instil the fear that simulation appears to. This may be even more complex than initial review would suggest. All of the simulations I observed for data collection were simulation *learning* events, with no possibility of censure, but the student paramedic still showed significant anxiety. However, as well as the overt assessment association, there appears to be a relationship to the performance necessary in the scenario. Having to perform merely adds to the anxiety and the troika of: a) having to perform a scenario in front of an audience, b) possible career-ending assessment and c) the nature of the power of the tutor and organisation; serves to make the simulation a terrifying event. These three issues are explored in chapters five, six and seven and explain why the student paramedic approaches simulation with apprehension.

#### **1.4.3 Theoretical concepts and frameworks**

This study has a number of theoretical viewpoints that run throughout, sometimes overlapping but interwoven into the thesis as a whole. The study relies on the assumption that all human interaction has meaning and that this meaning can be analysed. The ethnomethodology that runs throughout gives the sociological perspective required for the examination of the culture of ambulance education. This leads to a number of other theories including dramaturgical sociology, which is a fundamental aspect of this study. The suggestion that human interaction is dependent on time, place and audience is integral to this study and is seen in many of the chapters. The theories of critical pedagogy also play an important role, particularly in chapter seven and to a certain extent throughout the thesis. These theories help to identify and explain aspects of the student paramedic's development and their career within the organisation and the many roles and relationships they are part of. The examination and possible reconstruction of curricula (or parts thereof) is an aspect of critical pedagogy that is addressed by this thesis.

#### **1.4.4 Structure of the study**

This thesis has eight chapters, this overview chapter and seven others. Chapter two offers a detailed literature review and in many ways is the 'backbone' of this study. It allows for the contextualising of this research in the wider literature of simulation and gives a rationale for the thesis. The literature

review shows that although common elements exist, there are clearly gaps in current evidence; gaps that I believe are filled somewhat by this study. Chapter three describes the research design both in terms of methodology and methods, making note of relevant literature where necessary. A compressed time mode study requires a very close review of what is said and seen and this chapter explains how this was done. Chapter four gives a detailed description of the simulation event within a course of study. It identifies how a student paramedic prepares for a simulation and how they are prepared, taught and debriefed. Chapter five explores the data that suggested simulation could be linked to performance and analyses the associated themes. Chapter six examines the anxiety accompanying simulation learning and its relationship with assessment. Chapter seven examines some of the aspects of simulation through the lens of critical pedagogy and the final chapter provides conclusions and suggestions for alteration to current practice.

## **1.5 ADDING TO THE LITERATURE**

### **1.5.1 Gaps in the literature**

Although the gaps in the literature are detailed in chapter two, it is clear from an initial overview that key topics are yet to be explored. The performance aspects of simulation and the association with assessment and theories of power in simulation have very little (or no) published reliable and robust evidence. Paramedic literature has increased in recent years but focussed research on paramedic simulation and attitudes to how simulation learning is perceived, remains scarce. It is notable that when I started this thesis in 2008, there appeared to be a relative dearth of paramedic and even wider medical simulation evidence. However, the published literature on simulation appears to have grown exponentially. This research was carried out because of a lack of literature in the field and although each new published article caused me some anxiety, hoping that another researcher was not ‘stealing’ my topic, it was pleasing to see the growth in interest in this subject that I had been so passionate about for so many years. Review of the current published literature still shows a clear need for further evidence on the subject of the participant experience of simulation learning and specifically attitudes to *paramedic* simulation. This is to build on the foundations of existing research. The greater part of simulation literature tends to refer to nursing or emergency physician practice and perhaps this spotlight on the paramedic profession and ambulance service use of simulation, will provide a greater focus on paramedicine. Therefore, this study contributes to a growing paramedic literature, in that it explores student and tutor attitudes to simulation during paramedic development.

### **1.5.2 The contribution this study makes**

From analysis of the research questions, it is clear that this study contributes to knowledge as none of the research questions is answered by currently available evidence. The perception that simulation is invaluable in paramedic education is explored in this thesis, whereas much current literature merely *assumes* that it is invaluable without giving or analysing evidence to substantiate this claim. The relationship between student paramedic development and performance (through simulation events) and the assessment of such performance is investigated for the first time in this study. Simulation has been discussed in previous literature but this is the first study that explores themes taken directly from student and tutor experience. Finally, this study is the first to suggest alterations to simulation that are based on analysed student and tutor data.

## CHAPTER TWO – LITERATURE REVIEW

### 2.1 INTRODUCTION

The aim of this chapter is to give an overview of the relevant themes in the current literature rather than to focus on specific hypotheses or predetermined topics. As discussed in the next chapter, the type of study that this thesis aims to be has themes generated from the data collected during the research. Therefore, it makes more structural sense to offer literature reviews for each particular theme and theme-generated topic within the relevant chapter. Related theories and data are integrated within each chapter but this general literature review focuses on broad themes as outlined below. It is apparent that there are significant gaps in the general literature, this will become evident on reading this chapter and therefore justifies this study. It is appropriate to lay the foundation of this research by giving an introductory summary of simulation literature and the history and evidence available. This is helpful as it places this study within the context of existing knowledge. It is worth noting that most of the literature reviewed and used in this chapter calls for further simulation research. As table 2.1 sets out, this literature review distinguishes three major areas to highlight different aspects of simulation.

*Table 2.1 – The three areas of literature review of this chapter.*

<i>Existing simulation literature overview</i>	This is an overview of current literature on the topic of paramedic simulation.
<i>Reasons for the use of simulation given in the literature</i>	The first question in this study asks why simulation is perceived to be invaluable to paramedic education. This section of the literature review explores why, in the literature, simulation is perceived to be invaluable.
<i>Comparing simulation</i>	This part of the chapter explores and compares two educational paradigms that are closely related to simulation: problem-based learning and critical thinking. This section gives reasons why some literature (and some ambulance staff) define problem-based learning or critical thinking <i>as</i> simulation and simulation <i>as</i> problem-based learning or critical thinking.

## **2.2 SIMULATION LITERATURE OVERVIEW**

### **2.2.1 Simulation in paramedic curricula**

As part of the change to a professional ethos of paramedicine and the suggestion of a greater use of a wider range of pedagogical tools, simulation learning has become central to paramedic education. The first research question this study asks why simulation is regarded as vital in paramedic education, as it is treated as unquestioned good practice in some medical texts. Mackway-Jones and Walker (1999) regarded simulation as a compulsory part of medical education in their core medical teaching textbook. Sanders (2001) and Caroline (2008), whose paramedic textbooks are used widely in UK paramedic education courses, advocated simulation and both give outline scenarios for the reader to practise. Some paramedic higher education courses also integrate simulation as a fundamental aspect of their curriculum; the University of East Anglia's paramedic course (2009) being representative of many in the UK. However, these textbooks and courses advocate simulation learning as a key part of paramedic education without explaining why this may be so.

Although these courses and textbooks do not give evidence to suggest why simulation is so important in paramedic education, a recent meta-analysis explored over 600 published studies on simulation. It suggested "technology-enhanced simulation training is associated with improved outcomes in comparison with no intervention for health care professionals" (Cook et al., 2011, p. 987). This article focussed on skills-based simulation with the outcomes mentioned being patient parameter outcomes. In other words, did the simulated patient improve after simulated intervention? However, there was no evidence in this research specifically on paramedic simulation and the majority of papers reviewed focused on nursing and acute medical skills. The difference between paramedicine and other health care providers and why the 'broad brush' that is medical simulation may not be entirely applicable to paramedic simulation, will be explored later in this study.

The Health Professions Council (HPC), which accredits all UK paramedic courses, whether ambulance service or university-based or led, identify simulation as fundamental to their validating Standards of Education and Training (SET), as SETs 4.6 to 4.7 shows:

We will look for evidence of independent and reflective thinking through student-centred learning, teaching and assessment strategies ... We will look for evidence of evidence-based practice through student-centred and independent learning, teaching and assessment strategies. Evidence could include ... practice simulation and debriefing.

(HPC, 2009)

I have knowledge of several ambulance services, both in the UK and overseas, and all use simulation learning and assessment as a mainstay of their student paramedic progression pathways. Both university and vocational student paramedic pathways use simulation learning and rely on simulation as a key part of their assessment strategy. This is a fundamental consideration in the exploration of the relationship between simulation learning and simulation assessment. It is apparent however, that simulation can mean different things in different texts and even in different research papers, so a useful part of this literature review is an exploration and analysis of the wider simulation literature that has been published.

### **2.2.2 Origins of simulation**

There is some disagreement in the published evidence as to the origins of simulation learning, although Rosen (2008) argued that medical simulation may be traced directly from the early model and later computer simulation used in aviation. This originated from the earliest days of aviation and the need to train large numbers of pilots during World War One. Buck (1991) maintained that obstetric mannequins used to train midwives were first used in France in the seventeenth century. However, archaeologists have found clay and stone models throughout early civilisation sites that may have been used to demonstrate medical conditions. This would suggest that medical simulation might have as long a history as medical provision itself. It can be deduced that simulation models were useful where there was either lack of a patient or where a teaching aid was required. It may also be possible that these teaching aids were used to protect patient modesty; note the use of obstetric models, obstetrics requiring perhaps some of the most intimate of medical interventions.

### **2.2.3 Modern simulation**

Denson and Abrahamson (1969) advised that organised widespread health simulation learning increased in popularity in medicine in the 1960s. It swiftly became a staple teaching method, not only for doctors but also used widely in nursing. With medical interventions growing in scope and aggression in the twentieth century, along with the technological breakthroughs necessitated by

World War Two, Rosen (2008) suggested that simulation was an appropriate use of resources in the practise of these new skills and increased use of equipment in the changing medical arena.

It becomes apparent on initial literature review, that much of the published research has concentrated on quantitative indicators of skills used. Hall et al. (2005) explored the efficacy of endotracheal intubation by paramedics and Okuda and Quinones (2008) assessed simulation in terms of cardiac emergency outcome. Lammers, Byrwa, Fales and Hale (2009) assessed paediatric skills outcomes using simulation and Sahu and Lata (2010) explored evidence on resuscitation survivability. I am not suggesting that this type of research is not essential in advancing paramedic practice; merely that it is as different a study as one that has nothing to do with simulation at all. Understanding that using simulation to teach clinical skills improves outcomes for patients who are ill or injured is important but not within the remit of this research. There is no doubt that these types of study are vital in assessing the efficacy of medical interventions but this thesis does not focus on patient outcome within numerically assessable parameters. It reflects on the learning experience of the student paramedic foremost and the tutors that support them.

#### **2.2.4 Literature analysing simulation as invaluable**

As an overview of the simulation literature shows, authors tend to rely on personal feeling, personal experience or evidence from other sectors. The use of simulation as a teaching or assessment tool in emergency care was examined by Holcomb et al. (2002) and rated highly. Rogers, Jacob, Rashwan and Pinsky (2001) explored some problem-solving skills using patient simulators, although Issenberg et al. (2005) suggested that simulation is useful merely as one of many teaching tools and only when integrated into an overall curriculum. This meta-analysis found no definitive study that suggested the use of simulation as a detached education tool used in isolation without other teaching and learning tools. Issenberg et al. (2005) suggested that this was a trend in much of the literature and that simulation should not be regarded as an isolated practice but as one of a number of tools, although does not say why. Perhaps the tendency is to feel that if a wide range of pedagogical tools is used, then surely some will be effective; that by throwing a variety of learning tools at the student, surely some will stick. Of course there may be some truth to this concept of planting as many seeds as possible in the hope that some flourish. However, Wayne et al. (2006) went further and suggested that simulation used in this scatter manner is just an exercise of mastery of skills rather than a holistic learning strategy in the development of a student.

### **2.2.5 Literature on student experience of simulation**

Much existing literature has concentrated on the efficacy of medical simulation as an educational tool in saving lives, as a brief review of the vast majority of simulation literature attests. This study is not concerned with a particular illness or injury or the use of simulation to make a patient better (or at the very least not make them any worse!). It focuses on making the most of a learning experience and acknowledges that simulation experience may be unnecessarily stressful and suggests ways in which it could be altered. However, some research has been carried out on student views of the simulation learning experience. It is proposed from limited evidence that some students regard simulation highly. Gordon et al. (2001) carried out a small-scale survey study eliciting basic like/dislike information and most of the sixty medical students and faculty suggested that simulation was either very good or excellent based on the question: ‘How do you rate simulation?’ When reviewing likeability, most literature seeks student views quantitatively. Ten Eyck, Tews and Ballester (2009) used a Likert scale to ascertain satisfaction of simulation for medical students sitting examinations, from not satisfied at all to very satisfied. They found that there were slightly better outcomes in assessments when taught by simulation as opposed to group discussion and that students enjoyed simulation learning.

Gordon (2000) used a small-scale study to suggest students “enjoyed working through the problems under the pressure” (p. 522) without any data to suggest this. It is worth noting that some published evidence seems to rely on hearsay and personal sentiment when expressing student experience of simulation. Consider Wong, Ng and Chen’s (2001, p. 133) statement that “trainees usually find simulation sessions less boring than traditional learning. Indeed, many participants enjoy a surge of adrenaline and the ensuing excitement during clinical simulation”. As with the Gordon (2000) article mentioned in this paragraph, there is no reference in this paper to substantiate this claim and an evaluation of this paper shows no data collection or analysis.

### **2.2.6 Literature exploring possible future trends in simulation**

It appears from the literature that simulation is used widely in medical education and as discussed, may well be a useful part of an overall learning strategy. Bradley (2006) argued that medical simulation has stagnated for a long time and that the basic technologies have not allowed for progression of simulation as an educational tool. He suggested that simulation is on the verge of a new era and will follow wider education trends such as outcomes-based education (discussed later

in this chapter). Williams, Brown and Archer (2009) postulated that DVD simulations might be effective when used to replace some tools of paramedic education, although Clegg, Hudson and Steel (2003) advised against all embracing technological advances in education. They suggested no technology is neutral, all have hidden (government) agendas and that not to use e-learning meant being left behind in the global shift towards technological educational tools. In the wider health simulation literature, Kneebone (2006), whilst acknowledging the use of simulation in practising skills repeatedly, suggested that this was only a small part of simulation's potential application. He advised that the focus on skills and performance could obscure the possibilities of simulation for the future, specifically the need to keep simulation within the levels of complexity in all the different healthcare disciplines. Gaba (2004) has also written about the future of medical simulation and gave a comprehensive list of applications, most of which were not relevant to this study. When reflecting on one of the themes of this study, that simulation learning is adversely affected by being run in a similar manner as simulation assessment, it is interesting to note that Gaba suggested a fundamental role of simulation in the future would be as a competency assessment tool.

## **2.3 REASONS FOR USE OF SIMULATION GIVEN IN LITERATURE**

One of the key questions in this study is why simulation is perceived as so important in student paramedic education. Why simulation may be important has been evaluated in this thesis as part of student and tutor data analysis but it is worthwhile to ascertain why the wider published literature regards simulation as invaluable. Therefore, this section of the chapter highlights and discusses the reasons given in literature as to why simulation is perceived as invaluable.

### **2.3.1 Elimination of risk as a reason for use**

The suggestion that simulation learning is used to eliminate risk pervades much of the literature. If I had listed all of the published articles that stated that simulation is used to provide a safe atmosphere, over half of the papers on simulation used in this chapter would form part of that list. Rauen (2001) argued that in the very highly dangerous profession of medicine, where even the most seemingly trivial mistake can lead to patient disability or even death, avoidance of risk to patients during simulation learning makes it advantageous. Medley and Horne (2005) suggested that errors could and *should* be made during simulation to help improve patient care, the rationale being that errors are best made during learning processes rather than in practice (although this appears to be self-evident). They suggested that in industries and professions with a low tolerance for error, the

use of simulation to eliminate (or at least reduce) risk seems to be considered the most important reason for the use of simulation. Essington (2010) stated that, along with the nuclear, aviation and military sectors, paramedicine needs simulation to ensure that mistakes can be made in a secure environment. Ziv, Wolpe, Small and Glick (2003) suggested that there is an ethical imperative to using simulation learning and that error management and patient safety should form part of an ethical analysis of this learning opportunity. There seems to be a dual rationale: a) simulation prevents learners inadvertently killing or injuring patients through their lack of knowledge and skill and b) prevents potentially dangerous interventions harming the learner.

It is clear that not all simulation in medicine and paramedicine is based on critically ill or injured presentations. In all of the scenarios I observed, none of the simulated patients was likely to die imminently or deteriorate significantly from lack of intervention. It would have taken considerable maltreatment before harm was caused. However, it must be accepted that there is a risk consideration for a very small group of simulated patients from some medical interventions. For example, carrying out cardioversion on a patient where it is not needed could kill them and inaccurate or inappropriate use of defibrillation may harm the operator. Defibrillation is the discharge of continuous electrical energy through a medium and therefore any medium that the electricity can flow through is at risk from accidental or incompetent defibrillation. This is generally avoided by not touching the patient and in doing so, becoming part of the electrical circuit. The danger from defibrillation to all who may be in contact with the circuit is grave. The pulse of current is intended to depolarise all cardiac muscle cells, it cannot differentiate between the cardiac cells of the patient and the cardiac cells of the operator. Therefore, if someone is in contact, serious dysrhythmias or even sudden cardiac arrest can occur. The massive voltage needed to put the charge through the resistance of a circuit (the patient's chest, defibrillator pads etc.) can prove fatal and this may account for the increased use of mannequins when these types of intervention are used.

This safety aspect of simulation is only relevant when a live defibrillator is used and companies can supply defibrillators for training purposes only. These do not store or pulse electricity but cost a similar amount to defibrillators that do and this may be why ambulance services do not routinely use them. Between scheduled courses at the centres, where defibrillators form part of a stock list, 'live' defibrillators can be used on emergency vehicles to save lives. The counter-argument may be that the student paramedic needs to practise assessing and treating patients and it would be unethical and unlawful to allow a completely (or even partially) untrained student to practise on an actual sick

or injured patient. It would also be unethical for a registered health professional, the qualified paramedic on an ambulance, to allow this to happen.

Therefore, from the literature on elimination or reduction of risk as a reason for using simulation learning, it is apparent that most paramedic simulation experience is not based on potentially lethal intervention. However, this suggestion pervades much of the medical evidence and this is then accepted in paramedic-specific research. I would suggest that the use of scenario learning to reduce risk is relevant only for a narrow range of simulated patients. The seemingly overwhelming reason given in much of the literature for simulation learning, that of patient safety, may be partially (but cannot be entirely) correct in paramedicine for the reasons identified.

### **2.3.2 Outcome-based education as a reason for use**

Outcome-based education is a teaching tool that concentrates on what the student can do at the conclusion of a learning event; in this paradigm it is the outcome that is all-important. So if this concept were applied to student paramedic education, the simulation event would require an outcome and this would appear to be satisfactory treatment of the simulated patient. Scalese, Obeso and Issenberg (2008) linked medical simulation with the move to an outcome-based education system and argued that competence should be clearly demonstrated by simulation. McGaghie, Issenberg, Petrusa and Scalese (2006) concluded from earlier published evidence, that the more simulation a student participated in, the more defined and identified the link would be to standardised learning outcomes. It was suggested by Issenberg and Scalese (2008) that the outcomes-based learning environment would become the focus for medical education of the future, with simulation being a key part of this evolution. It is possible that medical teachers and paramedic tutors may have traditionally felt more comfortable with a student being expected to show that they have mastered a skill before being let loose on an unsuspecting public. As discussed, there may be sound ethical reasons why students should practise before being allowed to assess and treat actual patients.

### **2.3.3 Financial considerations**

Review of the evidence showed the cost motive for simulation learning remains unexplored. However, Gaba (2004) stated that cost effectiveness is a good reason for using this method without clearly showing cost comparisons between simulation and other teaching strategies. In

paramedicine, simulation learning may not even have a financial consideration. It is far less expensive to have a student paramedic on an emergency vehicle than to place them full-time in an education centre and raise associated costs of back filling the vacancy that their absence leaves. A student paramedic receiving the National Health Service Agenda for Change pay rate receives £10.10 per hour whilst training. The average classroom day is 7.5 hours but to put a qualified clinician on a vehicle would cost £11.53 per hour for the average 12-hour shift. This does not include unsocial payment for working nights and weekends. Therefore, to put a student paramedic in an education centre costs £811.12; this is £378.75 for the wages of the student paramedic plus £432.37 for the wages of the paramedic filling their space on an ambulance. This is on the assumption of full staff establishment and only considers wages so does not include tutor provision, overhead costs such as lighting and heating or the 25% unsocial hours payment. It may be useful to explore this in detail but this financial consideration will not be explored further in this thesis.

## **2.4 PROBLEM-BASED LEARNING**

Problem-based learning and simulation seem to be interchangeable terms at times and I have often heard both students and tutors define simulation as problem-based learning. However, the claim that problem-based learning is a student paramedic completing a simulation by being given a set of physiological parameters and then evaluating a diagnosis, is mostly incorrect. Although there is a problem to solve (the problem being what is wrong with the simulated patient) simulation is not problem-based learning in the true sense of the term and why this may be so is explored in this section of the chapter.

Problem-based learning (PBL) was first popularised by Barrows and Tamblyn (1980) who advocated its use for medical students. They suggested this strategy would allow learned skills to be applied to practice simultaneously. Small groups of medical students worked together to explore a set of symptoms that a patient might have, to determine what the deficiency was in their (the students') knowledge. This would help the students decide what further information was needed to treat the patient. Since the 1980s, there seems to have been a plethora of perspectives and frameworks suggested on how PBL should be used. Savin-Baden and Howell Major (2004) have suggested that most texts agree that PBL is a student-centred approach to education, which allows freedom of student learning beyond that which is traditionally used. Conway, Little and McMillen (2002) proposed that PBL is a possible key to social reform in education. This is especially pertinent when considering the latter themes of this study and particularly those of control and power. Some

mention must be made of the term enquiry-based learning and some texts and evidence do not seem to differentiate between the concepts of enquiry-based and problem-based learning and simulation. Price (2003) argued that enquiry-based and problem-based learning are completely separate approaches, that to enquire does not require a problem or more importantly, a problem to solve.

#### **2.4.1 Problem-based learning frameworks**

Margetson (1998) argued that there are two separate but linked frameworks in PBL, the convenient peg theory and the growing web theory. These theories approach the issue from two very different perspectives. The convenient peg theory allows the student to build on a foundation of knowledge to allow them to highlight where the knowledge gaps are and to use existing skills and information to solve problems. The peg metaphor is generated by the idea that the student can ‘hang’ their knowledge on the problem. The growing web concept of PBL suggests that the student generates knowledge from the problem itself; it allows the student to acquire the knowledge whilst the problem is being worked through. The growing web approach allows the student to add on to their knowledge, allowing their web of knowledge to grow as they work through the problem itself. An outline is shown in table 2.2.

*Table 2.2 – Margetson’s (1998) theories of PBL.*

<b>CONVENIENT PEG THEORY</b>	<b>GROWING WEB THEORY</b>
<i>This theory suggests that:</i>	<i>This theory suggests that:</i>
PBL is a two-stage process. First the student acquires knowledge and then applies this knowledge to a professional problem.	PBL is a one-stage process, acquiring and applying knowledge should happen simultaneously.
Each PBL event should be small and broken down to component parts.	Problem and context are inseparable.
This PBL does not truly involve a ‘problem’.	There is not always a solution to the problem.
This PBL may be used for fixed fields of knowledge.	This PBL may be used for more esoteric, flowing fields of knowledge.

#### **2.4.2 Simulation related to problem-based learning**

Using this framework, it becomes clear that the simulation learning used in paramedicine is part of the convenient peg theory of PBL. As discussed in chapter four of this study, the student acquires their knowledge *prior* to starting simulation learning. The course of study that the student undertakes is theory-heavy in the initial weeks and subsequently the student uses their learned knowledge to assess the patient and formulate a care plan. There may not always be a diagnosis but there is always a framework within which a student must stay. Sometimes the student will have a session on a particular skill or knowledge and then later in the same session will apply the learned knowledge to a practical application. To use a very basic example, the student may learn how to apply a bandage either by a PowerPoint session or a tutor showing how to apply on another student, the students then practise this skill on each other. This is clearly the convenient peg theory and according to Margetson (1998), does not meet the general ethos of PBL. I would suggest that most PBL situations are in fact project based learning rather than in keeping with true PBL. Savin-Baden (2010) argued that when engaging a student with a problem, the problem itself should be recognised as having three dimensions: the context, the content and the schema. However, it is the transferring the context, or the problem to different situations, which makes PBL worthwhile. To use the same author's example, the problem of a patient with chest pain can be better solved on a subsequent simulated patient's chest pain but only if the context is changed.

#### **2.5 CRITICAL THINKING**

Although there appears to be some overlap, with critical thinking and PBL sometimes incorrectly used almost interchangeably, critical thinking is a very different concept from PBL. Critical thinking is regarded as the skill of working beyond protocols and deciding options beyond those that may be accepted practice (Janing, 1994). Hauswald (2003) suggested that, in reality, this means the development of practical skills such as deciding whether to transport a patient to a care facility or treat them at home. This has a cost benefit, as encouraging the patient to not attend a hospital takes a significant financial weight off the wider NHS and allows ambulance services to meet funding standards (such as response time limits). There is some suggestion that these critical thinking skills allow a paramedic to go beyond restricted protocols, to critically analyse how the patient presents and to formulate the best possible care plan. This is somewhat unhelpful in practice, where a patient may not present with clear signs or symptoms of illness that requires accepted treatment. It is discouraged in some ambulance services to go beyond a relatively strict framework of treatments

and for very good reason. A paramedic must have a clear understanding of what critical thinking is, its processes and potential pitfalls, before they can decide on an alternate course of action. There is also the consideration that so few paramedic programmes embed critical thinking development in their curricula. However, Sullivan and Chumbley (2010) suggested that there has been some move towards advocating critical thinking in paramedicine (within clear framework guidelines) and this may possibly change paramedic practice of the future. As mentioned, there is a potential cost saving implication, which always proves attractive to ambulance services.

### **2.5.1 Critical thinking and problem-based learning**

In the wider medical education literature, simulation has been suggested as the tool with which to promote critical thinking. This idea that a paramedic needs to not only understand but also analyse and apply knowledge, is becoming more common in literature. The use of simulation learning to ascertain critical thinking skills has been evaluated in nursing students; Johannsson and Wertenberger (1996) suggested that simulations could help a practitioner think critically about a care pathway. Janing (1994) and Rauen (2001) have both stated that critical thinking is a goal in paramedicine and Boyle, Williams and Burgess (2007) suggested that simulation might be useful in educating a problem-solving paramedic practitioner. It has also been argued by Williams (2005) that this use of problem-based and critical learning can help the student paramedic solve a case rather than merely ascertain facts. Williams (2006) later suggested that simulation might even allow the student paramedic to take a greater role and therefore have greater motivation regarding their development. However, it must be noted that Steadman et al. (2006) found there was no greater benefit to the outcome of illness or injury of patients using a wholly problem-based learning approach or wider critical thinking skills. They suggested that it was the blending of these two educational tools that provided the greater outcomes in the key indicators of patient care (comfort, survivability etc.). Gordon et al. (2005) argued that the use of critical thinking might also decrease patient mortality and morbidity in some recognised medical conditions such as acute stroke. This study gave students a blended approach of critical thinking and PBL for patients with stroke symptoms. Knowledge was assessed pre-and post-learning session against more usual teaching, which was input of information in a didactic way. The learners with the critical thinking and PBL simulation session assessed and treated the simulated patient in a more appropriate way than the control group. Therefore, it is clear that *some* critical thinking skills may improve patient outcome and can benefit the organisation but Whiteside (1997) advised that critical thinking might have limited use without clear direction and modelling.

In carrying out the literature review for this research, I noted a lot of evidence seemed to be cited in support of the same repeated points and I could have used the same published research to make statements in several of the headings in this chapter. A significant argument that seems to pervade all of the published research is the insistence that a greater quantity and quality of literature is needed to move simulation forward. Paramedic research is becoming more abundant although there are still significant issues that have yet to be investigated, some highlighted in this chapter and elsewhere in this thesis. What is clear is that, on reviewing the current literature, there appear to be several gaps in the evaluation of paramedic education, paramedic simulation and student and tutor experience of simulation in particular. This would suggest a considerable gap that will be filled somewhat by this study.

## CHAPTER THREE – RESEARCH DESIGN

### 3.1 INTRODUCTION

This chapter discusses both the methodology and method of this study from theoretical and personal points of view. It sets out my epistemological stance and then discusses the way in which I carried out the research and how I analysed data. This emic study uses an ethnographic process and method to analyse meaning in the ambulance education culture and more precisely, ambulance simulation culture. The ethnographic aim, that a cultural interpretation can be obtained during a process, fits the subject of this study very well. The cultural nuances can be obtained by a number of data collection tools and the usual participant observation, interview and field journal provided deep and rich foundations for analysis. The insider aspect of this study allowed me to interpret meaning from a unique viewpoint and the compressed time mode allowed for the feasibility of a field study over a year and a half and many student paramedic courses. The data were collected in two ambulance services in three education centres and a content and thematic analysis was completed based on the research questions as outlined in chapter one. This chapter examines the ethnographic approach and the methodology used in the process of data collection and discusses the ethical considerations of carrying out research in my own workplace, a workplace in which I hold considerable power. My own personal and professional identities have been shaped by the experience of carrying out this study and if the aim of a good ethnography is to tell a story then this thesis is telling the story of ambulance simulation education.

Ethnography as a product should allow for the study of social occurrences and the analysis of the meaning of these phenomena. In the case of this study, the particular occurrences are part of simulation learning in an ambulance education setting. Ethnographic data analysis generally involves the interpretation of meanings in social settings and human actions; it may be carried out in a wide range of settings with almost limitless theoretical perspectives. Any situation where people come together such as a work place or community or anywhere where interaction occurs may be used (Boyle, 1994). Therefore, it is appropriate to use this methodology in this context for this research. It may be argued that ethnography is not only a product but also a process (Wolcott, 1995) and it is worth noting that ethnography is not a single research method or methodology. This thesis does not claim to be an ethnographic study, merely a study that uses an ethnographic approach to methodology and methods. Although there may appear to be some overlap with case study methodology, the principles of ethnographic methods apply here, as this study is investigative rather than explanatory. It is studying a culture rather than a group or set of groups and it aims to look inward

rather than the outward usually associated with case study. However, this study moves on from the case study versus ethnography debate and rather assembles both approaches by using ethnographic methods to bound a study of the case of student paramedic simulation learning. Willis (2007) suggested case study and ethnography are more similar than dissimilar and that is especially true of this study. My aim in this study, by using the methodology outlined in this chapter, is to be the 'perfect spy' (Cohen and Court, 2003, p. 284). This thesis uses common ethnographic tools such as participant observation, interview and field journal. The culture of ambulance education requires a cultural analysis and therefore provides justification for the ethnographic approach used for this study.

### **3.1.1 Validity**

The validity of this study is integral to its structure and coherence. Hammersley (1979, p. 79) suggested that "an account is valid or true if it represents accurately those features of the phenomena that it is intended to describe, explain or theorise." That is certainly true of this study, the account does in fact find out what it intended to find out about (student paramedic simulation learning). Using multiple sources and perspectives from both students and tutors has mitigated threats to validity in this study; as has the use of multiple discussions taking previously identified themes forward for participant validation and my own reflexive field journal. This triangulation of perspectives, thoughts and considerations has ensured the objectivity and validity of this study remains intact. Triangulation, in this context, involves the crosschecking of data from several perspectives. There must also be some mention of generalisation; which, in much quantitative research means the ability to infer results from a sample size to the general population. However, in qualitative studies, including this one, generalisation occurs through the triangulation of data via the multiple perspectives as already discussed. This provides the platform to allow interview and observation coding. These multiple perspectives allow for the identification of similarities in data from different students, tutors, ambulance services and locations. These similarities can then allow for a certain generalisation of concepts and ideas. Of course, it is not possible to speak to every single student and tutor in every service at every point in his or her development. That is not to say that general inferences cannot be drawn from this study; however, the explorative nature of this study allows for generalisation to occur in subsequent studies, based on conclusions reached in this study; chapter eight contains a number of ideas, concepts and future research questions.

### **3.1.2 Crystallization**

There may be limitations using an ethnographic-type methodology and some critics claim that, as the results may not be replicated and cannot be generalised, ethnography may have limited validity as a research tool (de Laine, 1997). Although this may be correct, as it is clear that the data produced for this thesis does not lend itself to replicability, the detailed description of the context (rather than a quantitative frequency indicator) is what makes this type of study so rich in its content. This lack of numerical or objective contrasts can be outweighed by using ethnographic tools to provide perspective on the data (Denzin and Lincoln, 1994). Here too, I tried to ensure a more participatory approach and shared data with subsequent discussion groups to analyse and consider themes. This was to allow for both a more ethical design and a more robust means of allowing multiple perspectives and views to influence the study. Here, the use of crystallization helps when the nature of ethnography means not having a priori theory from which to work. This study's lack of one truth, but rather truths from multiple perspectives, allowed for similarities to converge; which seemed relevant to the study. This theory of crystallization, where the multiple perspectives seen in multiple facets allow themes and ideas to fall into place is well used in ethnographic studies (Ellingson, 2009). The idea that there is no single truth or no distinct line of enquiry is suited to this thesis. The idea being that there are an infinite number of facets to the crystal, the crystal being the study and the facets being the multiple perspectives.

## **3.2 MEDICAL ETHNOGRAPHY**

### **3.2.1 Physician ethnography**

In a critical analysis of which methodology to use for this research project, a review of other similar ethnographic studies proved useful. Medical education ethnographic studies tend to be based on physician education and perhaps the most widely read ethnographic study of medical education is Boys in White (Becker, Greer, Hughes and Strauss, 1961). This fascinating work looked at the culture of medical student life. The selective negligence discussed, which is the conscious selection of what the student feels is important to learn and what can be dropped from a saturated brain, seemed very familiar when reviewing the data collected for this study. Parallels could be drawn with the wide breadth and depth of knowledge we expect the student paramedic to possess. Perhaps the most well-known British medical ethnography is Atkinson's (1995) clinical teaching study, which again was a study of physician life but shone a welcome spotlight on medical education.

### **3.2.2 Paramedic ethnography**

On initial literature review, there appeared to be very few ethnographic studies specifically on the culture of ambulance services or aspects of its education. However, a recent study submitted as a doctoral thesis by a paramedic educator in Australia focussed on ambulance metaphor such as militaristic language and culture (Reynolds, 2008). Ethnographic methodology may still be regarded as the ‘poor relation’ to quantitative studies in paramedicine and my own experience when discussing this research with peers was sometimes frustrating. Some colleagues wanted to know how students discussing their experiences could be measured. Emergency care seems to perpetuate this myth and in the only reference I could find to research and research methodology in core emergency care textbooks, a clear message of the importance of a quantifiable comparable necessary in research was given. Taylor (2006) suggested that “the basic strategy of clinical research is to compare different groups of people. These might be different groups or the same group pre- and post-intervention”. This textbook mentioned sampling, bias, statistical significance, sample size and other tools and principles of a certain type of research. There was no mention of other (non-quantifiable) approaches. I have included this information to show that the lack of paramedic ethnography may not be the fault of paramedics or even the paramedic profession, merely a generational tradition within medical research that favours graphs and data and clinically related results. Much paramedic evidence does involve quantifiable data, double blind randomised controlled trials that produce long lists of ordinal, scale and nominal data that are computer analysed to show graphs and tables. However, it must be cautioned that this split of research into entirely qualitative or entirely quantitative may be unhelpful and there is some suggestion that all phenomena and all knowledge has a mixture of the two paradigms (Ercikan and Roth, 2006). Why an ethnographic approach may be the most suitable methodology for the research questions is explored further in the next section.

### **3.3 ETHNOGRAPHIC APPROACH**

#### **3.3.1 Accepted ethnographic principles**

It has been suggested that generally, ethnographic work must have most or all of the following:

- i. The researcher must become immersed in the culture's usual settings,
- ii. Participant observation and conversation are used,
- iii. Only a few participants are observed,
- iv. Any hypotheses usually come from the data,
- v. Data are interpreted rather than being statistically analysed.

(Hammersley and Atkinson, 2007, p. 10).

The idea that the study is carried out usually by a single researcher immersing herself in the participant's usual settings and contexts is easily applied to this research. The data collection took place in the student paramedic's familiar surroundings, the ambulance service education centre. All of the students observed and interviewed had been in the centre for at least two weeks, allowing them to settle into daily ritual and feel comfortable in their surroundings. This was to ensure the research had as little external physical influence as possible as the ethnographic study is dependent on researching people in their everyday surroundings. This allowed for as natural an interaction as possible, a key aspect of ethnmethodology (Atkinson, 1988). It may be suggested that an ambulance is the student paramedic's natural environment but this is untrue. Whilst the ambulance may be a familiar *work* environment, it is not a familiar *simulation* environment and simulations are almost wholly carried out in an education centre. The tutors were also interviewed in their usual surrounding, the education centre, in a room that the tutors regularly work in.

#### **3.3.2 Classic ethnography**

Some reflexive examination is warranted and in reviewing the methodologies of ethnographic type studies, I had some difficulty in deciding which of the many ethnographic approaches to take. The classic or mainstream ethnographies appeal to the widest audience and may be considered more academically robust and preferred by some academics and research supervisors (Adler and Adler, 2008). A classic ethnographic study for this topic may also be considered the most credible in medical and paramedical arenas. The concept of an interpretive dance to convey the social orders in a group may be considered too avant garde and without credibility among the paramedic

community. As discussed, non-traditional (non-quantifiable) research, may be less well received in paramedicine. However, as an academic who does not fit the traditional role of academic development, my own ease with a classic ethnography makes this approach more comfortable for me. Therefore, to refer to the research questions outlined in chapter one, an ethnographic approach in which the researcher immerses herself in the culture being studied, was necessary to ascertain how simulation was understood, responded to and participated in.

### **3.4 COMPRESSED TIME MODE**

Ethnographic tradition almost demands the long field study, with the so-called blitzkrieg methodology of Rist (1980) being accepted as contrary to the general ethos of ethnography. It seems that some of this demand to spend a considerable time in the field, is to ensure the budding ethnographer earns their qualification in the same way as their esteemed colleagues that have gone before. It may be argued by some academics that only by observing paramedics full-time for a significant period of time (à la Margaret Mead and other traditional ethnographers) typing up notes and transcribing interviews for years and perhaps decades, can the thesis be valid and the doctoral student have served their apprenticeship. This is impractical for this professional doctorate, so another strategy had to be considered. I concluded fairly quickly that it would be more appropriate to carry out a compressed time mode study (Jeffrey and Troman, 2004). These types of study are becoming more appreciated, especially in the current financial climate with studies having to be financially viable. This has parallels with the earlier work of Walker (1980) who used the term condensed fieldwork to advocate short, intensive time in the field. Certainly my situation, where I have self funded my studies whilst working full-time, made any protracted time spent in the field un-workable.

#### **3.4.1 Outline of observation and interview**

However, a compressed time mode study does not mean a one-shot, quick gathering of data. As seen in figure 3.1, I returned repeatedly to my participants over a period of 1.5 years and continually discussed my understanding of the findings and literature as they gradually grew. The first observation and interview took place on 1 July 2010 and the final discussion group occurred on 14 December 2011. This allowed me to 'dip in' to paramedic courses as they were scheduled. Neither ambulance service, in which the data collection took place, ran courses one after the other. So there were periods when I spent several days in the centres observing and talking to students and tutors,

and periods of several weeks in which I did not *formally* observe or talk to students or tutors about simulation learning. During this time, I analysed data and carried out a literature review based on the themes that emerged and of course, worked full-time and informally spoke to student paramedics and was involved in their simulation events as part of my work role.

*Figure 3.1 – Time line of formal participant observations and interviews.*

	Jul 2010	Aug 2010	Sep 2010	Oct 2010	Nov 2010	Dec 2010						
Observation	■	■										
Interview	■	■	■									
	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2011	Oct 2011	Nov 2011	Dec 2011
Observation												
Interview		■	■		■	■			■	■		■

The use of student observation is essential in this type of compressed study, with all detail being noted and analysed and almost every minute being accounted for and all meaning extracted. I aimed to contextualise data by researching broader themes found. These were then explored by speaking to subsequent groups of students and tutors. Ambulance education research is in its infancy and out-of-hospital care is so unlike other sites studied at length (secondary education, higher education and medicine), that new ways must be sought to make studies practical. Some ambulance staff learning is done whilst on road with a mentor but it would be impractical and unethical for me to be on an ambulance for any length of time to directly observe participants. My own professional and moral codes of conduct would not allow me to remain apart from a situation where a patient was unwell. I could not allow a patient to suffer or a condition to worsen while I observed the student in the out-of-hospital setting and I would be (quite rightly) open to censure and disciplinary or criminal proceedings. For these reasons, a compressed time mode ethnography proved a feasible solution. It is important to state clearly that all simulations observed as part of data collection were simulation learning events and not simulation assessment events. Although this is explored further in later chapters of this thesis, it should be understood that, when talking about the simulation events that the participants took part in, these were all learning scenarios.

### **3.5 DATA COLLECTION**

#### **3.5.1 Participant selection**

The selection of participants was based on the courses running at the time of the data collection period in the three centres I used. All participants had to be either students on an ambulance paramedic development pathway or a tutor teaching on the same development pathway. Two of the centres were in ambulance service A (named A1 and A2 in this study) and one centre was in ambulance service B. Some student participants were on their initial development, having not been operational at all. Some were part way through development, having spent a great deal of time in an emergency setting. My initial call for students to take part was via a classroom discussion and one page letter calling for participants (appendix B) given to all student paramedics on a development course. This letter had a tear off strip to be completed by those students that wished to take part and a confidential receptacle was placed in each centre, in which the students could place their completed forms. Out of a total of approximately one hundred students who would have been eligible, twenty-three students in total completed the tear off form and agreed to be observed during a simulation event and/or for a subsequent interview to be recorded. Of these twenty-three students, the split between ambulance centres and services is shown in table 3.1.

*Table 3.1 – Initial observation and discussion outline.*

EVENT	SERVICE	CENTRE	TUTOR OR STUDENT	TOTAL NUMBER OF PARTICIPANTS
Initial observations and interviews	A and B	A1 + A2 + B	Students	A1 = 6, A2 = 4 B = 4
Discussion group 1	A	A1	Students	3
Discussion group 2	A	A2	Tutors	3
Discussion group 3	A	A2	Students	3
Discussion group 4	A	A1	Tutors	3
Final workshop (discussion group 5)	A	A1 + A2	Students and tutors	6

Three centres were chosen because ambulance service A had two education centres and ambulance service B had one education centre (at the time of data collection). I felt that using three centres gave me the greatest chance of observing and speaking to a sufficient number of students and tutors. The ratio among centres was not actively sought; these are the centres in which the student paramedics that completed the participant form were based. All of the students that took part in this study completed a participant consent form (appendix C). The tutors were all experienced ambulance facilitators and I used a consent form similar in content to the student form (see appendix D). All six tutors were from ambulance service A, they were approached and agreed to take part in a group discussion. The tutors all worked in either centre A1 or A2. However, there was some overlap in centre tutor allocation. So in ambulance service A, the tutors worked in either centre when required. No tutors in ambulance service B were talked to formally, this was merely a matter of staff not available at the times I was able to speak to them.

Therefore, the final number of participants was twenty-three ( $N = 23$ ) students and six ( $N = 6$ ) tutors who completed the tear off slip and subsequent participant consent forms. I observed the initial fourteen students individually during simulation learning events and then interviewed them immediately after the scenario was concluded. These initial fourteen observations and interviews occurred over several weeks. The other nine students were talked to in three discussion groups after initial themes were generated. These themes were then discussed with the subsequent discussion groups. The tutors took part in three discussion groups, one discussion group took place after I had observed and spoken to the students and the second group discussed themes generated from the data. The final discussion group involved both students and tutors and discussed the analysed data and took more of a workshop format.

The names of all those who took part in this study were anonymised and placed in alphabetical order for ease of reading. Those whose anonymised names are towards the beginning of the alphabet (A to N) were students at the time of data collections and those whose names are identified by letters towards the end of the alphabet (W to Z) were tutors at the time that they were part of the discussion groups. As tables 3.2 to 3.4 show, the observation and interview times varied widely.

*Table 3.2 – Participant details (initial observations and interviews).*

NAME	LOCATION	OBSERVATION TIME	INTERVIEW TIME	INTERVIEW WORD COUNT
<b>Alan</b>	A1	32 min	26 min 20 sec	2,325 words
<b>Bryony</b>	A1	18 min	14 min 35 sec	2,271 words
<b>Claudia</b>	A1	24 min	6 min 35 sec	1,153 words
<b>David</b>	A1	42 min	11 min 34 sec	1,677 words
<b>Ethan</b>	A2	18 min	10 min 56 sec	1,736 words
<b>Fred</b>	A2	37 min	14 min 25 sec	2,338 words
<b>Graham</b>	A2	27 min	5 min 11 sec	863 words
<b>Helen</b>	A2	31 min	6 min 22 sec	1,184 words
<b>Ian</b>	B	28 min	9 min 28 sec	1,519 words
<b>John</b>	B	18 min	6 min 25 sec	1,170 words
<b>Katie</b>	B	24 min	9 min 40 sec	1,681 words
<b>Larry</b>	B	21 min	9 min 10 sec	1,313 words
<b>Michael</b>	A1	13 min	11 min 12 sec	1,472 words
<b>Natalie</b>	A1	9 min	9 min 36 sec	1,192 words

*Table 3.3 – Participant details (discussion groups).*

DISCUSSION GROUP	NAME	LOCATION	INTERVIEW TIME	INTERVIEW WORD COUNT
<b>1 (students)</b>	<b>Andy</b>	A1		
	<b>Bill</b>	A1	36 mins 45 secs	4,998 words
	<b>Charles</b>	A1		
<b>2 (tutors)</b>	<b>Will</b>	A1		
	<b>Yolande</b>	A1	27 mins 32 secs	3,528 words
	<b>Zach</b>	A1		
<b>3 (students)</b>	<b>Dan</b>	A2		
	<b>Emily</b>	A2	42 mins 2 secs	6,278 words
	<b>Frank</b>	A2		
<b>4 (tutors)</b>	<b>Wayne</b>	A1		
	<b>Yale</b>	A1	47 mins 17 secs	7,547 words
	<b>Zara</b>	A1		

*Table 3.4 – Participant details (final workshop).*

DISCUSSION GROUP	NAME	ROLE	INTERVIEW TIME
<b>5 (final workshop)</b>	<b>Gordon</b>	Student	
	<b>Hannah</b>	Student	
	<b>Ivor</b>	Student	3 hrs 26mins
	<b>Will</b>	Tutor	
	<b>Yale</b>	Tutor	
	<b>Zara</b>	Manager	

*Table 3.5 – Range of interview times and total word count.*

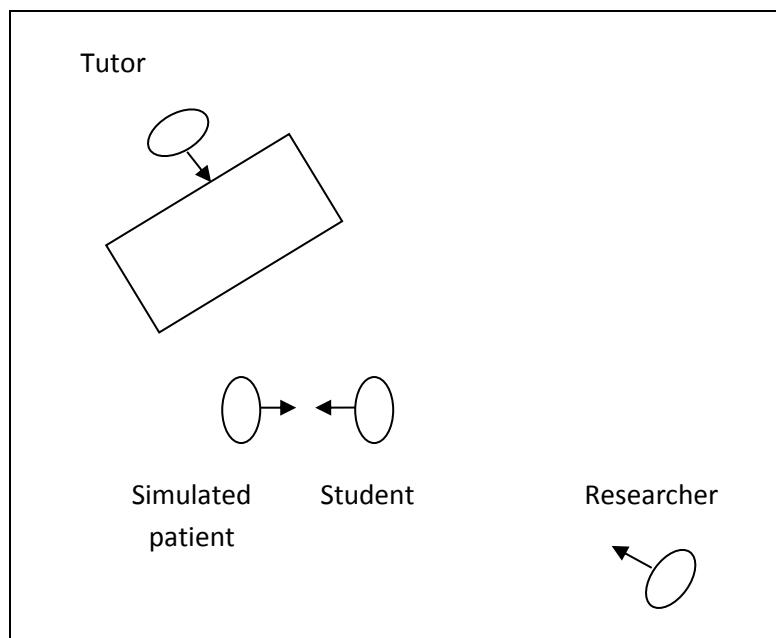
	FROM	TO	TOTAL TIME	TOTAL WORD COUNT
<b>Interview length (range)</b>	5 min 11 sec	26 min 20 sec	2 hr 31 min 29 sec	21, 894
<b>Discussion group length (discussion groups 1-4)</b>	27 min 32 sec	47 min 17 sec	2 hr 33 mins 36 sec	22, 351
<b>Final workshop discussion group (discussion group 5)</b>		3hr 26 min	3 hr 26 mins	Not recorded

### **3.5.2 Participant observation**

Participant observation was chosen as a data collection tool for this study as it allowed me to view and interpret (with my knowledge of ambulance education) concepts and issues that may not have been identified by interview alone. Interviewing without observation would not have allowed some of the data on setting and position and other physical considerations to be collected. A combination of observation and interview, certainly for the initial data collection, was most useful. Participant

observation can help in understanding the complex interactions at play during a simulation experience and all student participants were observed in a scenario situation prior to initial interviews. The student paramedic was the participant that was observed and I aimed to maintain as unobtrusive a presence as possible as this is regarded as a key aspect of participant observation (Grbich, 2006). My setting for the observations was consistent in all of the centres I visited; this was a large classroom with tables and chairs pushed to one side to allow for a clear area in which the simulation could take place. There was pre-prepared kit for the students to use and a table and chair for the tutor to sit on. Typically, each observation started with me already in the room, sometimes sitting on the floor and sometimes on a chair but always out of the direct eye line of the student. Although I ensured that I sat behind the student, sometimes the student would turn and face me to seek reassurance. When this occurred, I would put my eyes down and pretend to write on my notes, to make myself ‘invisible’; this layout is seen in figure 3.2.

*Figure 3.2 – Example simulation layout (aerial).*



A relative weakness of observation concerns the front the student paramedic may have constructed for me, an unobtrusive but still visible presence. By being in the room (however unobtrusive I tried to be) I may have unwittingly altered the behaviour of the student paramedic. I may have placed significance on an event that the participant felt was not significant at all. I may have observed behaviour that I felt was not worth noting but may have been hugely significant to the participant. The data collection had to rely on my working memory function and the speed at which I was able to observe and write. Observations are entirely subjective and almost impossible to replicate and

therefore, it could be suggested that they have limited reliability. However, much of this criticism is for participant observation as a lone data collection tool and that is not the case in this study. Observation was necessary to allow actions or behaviours that may not have been identified in interview, but interview was essential to build on the simulations I observed.

### **3.5.3 Interview**

To ensure the depth and density of description needed for this type of study, as well as observations, I carried out student interviews and discussion groups. The interview aims to seek understanding of a participant's assumptions (Hammersley, 2003) and I decided to use semi-structured interviews. This technique has a long history in the research process and is a recognised data collection tool (Sorrell and Redmond, 1995). All interviews were conducted in a private room in the centre with mutual agreement of the interviewer and participants. Semi-structured interviews were conducted around the key theme of experience of the simulation experience, either as a student or a tutor. It was important to have a semi-structured interview for the purposes of this study, questions based on the participant's responses allowed for the freedom of the participant to impart information that goes beyond the limited scope of a structured interview (Creswell, 1994). Certainly if a list of questions had been drawn up and asked, a bias may have emerged based on my themes rather than the participant's. However, some structure to the direction of the discussion was necessary to ensure a simulation focus. Student participants were interviewed individually initially rather than as a discussion group, as this initial data collection may have raised potentially sensitive issues for the student. To discuss these issues in the presence of others may have inhibited honest data collection in its early stages. However, I felt the use of small groups to discuss themes generated from the initial data collection would provide an open and honest environment for student and tutor alike.

The first student and tutor discussion groups took place after all individual student observations and interviews had been carried out. The subsequent discussion groups took place after key themes had been highlighted. These groups mirrored the real-life situation of people sitting in a room discussing their thoughts, generally regarded as better for information collecting (Barbour and Schostak, 2005). The final discussion group took the form of a workshop and participants suggested alterations to practice based on the themes identified earlier. It was important in this type of research to have interviews that were face-to-face rather than questionnaire or telephone conversations (Arksey and Knight, 1999) but this was certainly more labour intensive.

### **3.5.4 Field journal**

As per Emerson, Fritz and Shaw's (1995) guidance on writing ethnographic field notes, I kept a field journal for the duration of the study. Some texts use the term research diary but the general principles I used were the same (Altrichter and Holly, 2005). I wrote notes before, during and after each critical event, that is critical event as judged to be so by me. This was usually: before I went to a centre, before the simulations and interviews, during the participant observations and after the interviews and discussion groups. Sometimes the notes were brief and scribbled and sometimes clear and comprehensive; this was mainly due to time pressures at the time the journal was written. When I could understand my writing, I transcribed the field notes onto a locked laptop file and annotated the electronic file. Some parts of this field journal are included in this study, appropriate for this reflexive thesis. I found the field journal helpful, in that it drew me back into contextualising the data rather than merely allowing my personal feeling to influence collection. My field journal contributed greatly to the data in this study and I found it personally useful to reflect on my experiences.

## **3.6 THEMATIC ANALYSIS**

The use of participant observation and interview to provide thick description (Geertz, 1973) drives many ethnographic studies, but it is only in recent decades that a wider consideration of ethnographic research and its usefulness in understanding student experience been accepted. It has been suggested that the data analysis is the most complicated and difficult part of a research project (Glaser and Holton, 2004) and this proved to be the case, to some extent, in this study. The transcripts that were generated by the data collection were read and re-read and codes assigned to recurring themes. Open coding occurred, the data were examined and themes with similar meaning were grouped together. Certainly, this coding may be considered the heart and soul of any large text data analysis (Ryan and Bernard, 2003). This idea, that the data collected may cause themes to emerge that can then be analysed is not new or unique to ethnography or case study. However, there are differences between ethnographers and grounded theorists depending on their philosophical and ontological assumptions. Glaser and Strauss being the first to formally acknowledge the use of this methodological tool (Glaser and Holton, 2004). It is also suggested that grounded theory is a particularly appropriate methodology for areas of study where established theory or data is missing; this method (and methodology) generates rather than verifies theory. The role of theoretical sampling and, in particular, the iterative nature of this study would suggest that

the theory is already validated in the process of generating it. This is especially pertinent to this study, when relevant theory is non-existent and the theory that has emerged, has been grounded in the data. Theoretical sampling is "the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges (Glaser and Strauss, 1967, p. 45)". Therefore, this process occurred to develop the theory as it emerged and accounts for the data collection, analysis, data collection, analysis cycle of this study.

### **3.6.1 Initial data arrangement**

After each observation, interview and discussion group, the recorded .wav file (on a digital audio storage device) was manually typed into a Word document on a laptop computer. This gave me an opportunity to identify themes as the file was transcribed. All verbal quotes from the participants were translated directly. This included: delays, grammatical errors, profanities and in some cases, unintelligible noises. Following transcription, the Word document was annotated and the audio file replayed while I made notes directly onto the electronic transcript. These notes included comments about the participant's tone of voice, recurring themes and my own initial thoughts and feelings about the nature and significance of the data. I made notes to allow me to start to develop themes and to reflect on the situation/interview/observation, enabling me to ensure that I altered my questioning for the next discussions. I listened to the digital recordings of the interviews as often as I could, sometimes in my car on the way to and from work and during breaks. I maintained confidentiality by listening in a soundproof area or with headphones from a password-locked portable data storage device. This constant comparison of transcripts to highlight common themes proved useful and follows accepted practice (Green and Thorogood, 2004).

Each student and tutor I talked to was assigned a number, based on the chronological order they were interviewed and then a pseudonym alphabetised in order from A to N for students and W, Y and Z for tutors; gender appropriate pseudonyms were used. Where discussion groups were used, the person that spoke first was assigned the first letter; the second person was allocated the next letter and so on. I was aware that I was taking up valuable time and tried to ensure I didn't prolong the interview or discussion into breaks or beyond the session end time. The use of ambulance premises for interviews although cost-effective, may not have allowed for a neutral environment in which the participants were able to share their experiences openly (Benton, 2003). However, to have the interviews and discussion groups in an external venue would have not allowed for data

collection in the participants' usual surroundings. I allowed the participants to dictate the length of interview, so when the discussion reached a natural conclusion, I asked the students and tutors if they had anything further to add and then drew the discussion to a close. This accounted for the wide range in interview times and words transcribed.

### **3.6.2 Theme grouping**

This research design was not closely structured at the start and themes came from the data rather than having set theories to explore. This idea, that the data collected may cause themes to emerge that can then be analysed, is not new or unique to ethnography. The emerging of theory from data has been used effectively in this type of research for decades, although there are differences between ethnographers and grounded theorists depending on their philosophical and ontological assumptions. Glaser and Strauss were the first to formally acknowledge the uses of this type of thematic analysis as a methodological tool (Glaser and Holton, 2004). This method, and methodology, generates rather than verifies theory, clearly the case in this study. This approach allowed me to collect data with limited assumptions (note limited rather than no assumptions) and ensured that I was able to encourage the student and tutor to generate any themes they felt needed highlighting. The notion that, to ensure in-depth study, only a few people or a single setting is observed is particularly pertinent to this research. Observing an entire group of say thirty students at one time is impossible for one novice researcher. It is also impractical to observe and speak to a number of groups over a period of many cohorts. This would mean many years, and in some case decades, of data transcription and analysis. This use of a few participants and a small field of activity are well used in ethnographic studies (Fielding, 1993) and just as valid here. The data obtained were interpreted to extract meaning and consequence rather than any formal statistical analysis.

### **3.6.3 Emerging themes**

After I had transcribed and made notes from the audio files and transcribed my written observation notes, I used an Excel spreadsheet to set out and collate pertinent quotes and aspects. Each individual quote or aspect generated a point and the individual points were then grouped together in themes. As an example, the theme of anxiety grouped with the themes of self-criticism and motivation under the heading of stress. As is discussed in chapter six, stress is a physiological state arising from a psychological trigger (or triggers). This psychological state arises in times of anxiety and self-criticism and motivators for passing the paramedic course also cause this response.

Therefore, the groupings for chapter six are based on psychological factors that influence physiological responses in a mostly negative way. As an example, student Natalie, when asked how she felt the simulation I observed had been, stated she was “very nervous”. This point and others of a similar nature (Michael said he felt “very anxious” during the simulation) were grouped together. The themes then generated a title, so for the two quotes above, the theme title was anxiety. Once each individual theme was generated, they again grouped together under an over-arching heading. So to continue the example, the theme of anxiety grouped with other similar themes such as self-criticism and motivation. These themes formed a heading entitled stress and each heading grouped these related themes together to form individual chapters. An example of this process is shown in appendix E and the phases of data analysis and headings and themes generated can be seen in tables 3.6 and 3.7.

*Table 3.6 – How themes and headings were assigned to data collected.*

<b>PRIMARY PHASE</b>
Participant observations, interviews, discussion groups and field journal data generated. Hand-written notes and audio files transcribed and initial notes made.
<b>SECONDARY PHASE</b>
Terms and phrases put onto spreadsheet as quotes along with aspects of participant observations and field journal. Key themes highlighted.
<b>TERTIARY PHASE</b>
Key themes grouped under three headings, each heading with several themes.

*Table 3.7 – Headings and themes generated from data collected.*

<b>HEADINGS</b>		
<b>PERFORMANCE</b>	<b>STRESS</b>	<b>POWER</b>
↓	↓	↓
<b>THEMES</b>		
Script	Anxiety	Control
Cast	Feedback	Hierarchy
Role	Self-criticism	
Setting	Motivation	
	Assessment	

I ensured I did not force any of my notes to a theme or heading or subheading. This would have been inappropriate and would not have allowed for natural flow of themes and headings to emerge (Bogdan and Biklen, 1998). The themes and headings were discussed with my supervisor and I was able to use this challenge as additional data and these themes and headings then formed the basis for additional literature review. Chapter outlines were finalised based on grouped themes that appeared related. Therefore, chapters five, six and seven echo the three headings and sub-headings seen in table 3.7.

### **3.7 MY POSITION WITHIN THE AMBULANCE SERVICE**

#### **3.7.1 Being an insider**

As this type of research methodology does not have traditionally objective processes, the suggestion that the researcher's position and internal perspective can be vital and a valued part of the research has been recognised (Wellin and Fine, 2008). As part of my reflection during this research, I needed to consider my role as head of student paramedic education and how this may have influenced the data that were being collected. I considered strategies that allowed the observation of the student and tutor in their mundane everyday settings. As an example, I did not wear my uniform when in the role of researcher and by demarcating as clearly as possible my researcher role. This dilemma is not unusual and is one that many researchers face and was acknowledged and addressed throughout the study. By wearing uniform, I may have inadvertently exerted influence, so maintained casual dress and manner during data collection. I informed the participants of my primary research role

when interviewing and observing. However, my own feelings of concern when initially faced with simulation learning as a student may have significantly influenced this study. It may have clouded my judgement through a cloud of anxiety by inadvertently placing myself in the student paramedic's position. My own influences, incorrectly assumed by me to be bias initially, undoubtedly impacted my perception during the simulation events and subsequent interviews.

### **3.7.2 Amenable participants**

Those I spoke to in the ambulance service I work for were aware that I have the power to influence, and in the most extreme cases terminate, their employment. They may have felt that honesty may not have been the best policy during discussions. Regardless of how I dressed or how far away I sat, it is clear that the students and tutors could not help but see me as an ambulance manager and this certainly will have influenced the interviews. Student participants seemed to be keen on telling me how good they felt their tutors were, how patient, how knowledgeable. This may of course have been entirely correct but may also have been the student's attempt to say what they thought I wanted to hear. The tutors were overwhelmingly helpful and keen not to disparage the system they may have felt I was part of, or rather head of. As a senior manager, regardless of how casually I dressed, I may have naively felt that a mere change of clothes prevented the student paramedic (and tutor) from seeing me as the boss. Throughout data collection, everyone was amenable and friendly, almost too much on occasion and although I like to think this was due to my wonderful personality, may have been due to the position I hold in the ambulance service.

### **3.7.3 Defamiliarisation and familiarisation**

As a researcher intimately familiar with the culture I studied, an acknowledgement of the concept of familiarisation was useful. This principle necessitated me understanding the culture I studied in its own terms. This is especially important when the researcher is familiar with the culture studied and the reader may not be. Rosaldo (1989) suggested that cultures can appear so normal to those within that culture, that a certain degree of defamiliarisation from the culture they are part of is required. This theory has allowed me to step outside of the culture of paramedic education to question the norms I had so readily accepted previously. I understand that the readers of this study may be only peripherally interested or knowledgeable about simulation in student paramedic education and therefore, familiarisation for the reader needs to occur. This allows the reader to step into my world of paramedic education (albeit for a short while) and become familiarised with the

details of the simulation event. That is why the descriptions of simulation in this study, the context setting, allowing the reader to mentally wear the green uniform and sit in an education centre and become part of ambulance education, is required. Therefore, the detailed description in chapter four and throughout this study is essential to make this connection.

### **3.8 ETHICAL CONSIDERATIONS**

Much qualitative research is quite invasive and ethnographic methods are especially so. In this study, the challenges of being a paramedic/researcher proved difficult and the challenges of being a manager/researcher, doubly so. To shift between roles was hard enough for me, so for the participants, to see me one day as powerful manager and the next day as jeans-wearing researcher may have caused some dilemma.

#### **3.8.1 Ethical framework**

As a novice researcher, I felt that an ethical framework was useful for me and Burgess (1989) advised that there are some key concerns that the ethical researcher must consider during any educational study. The first of these is the issue of sponsorship and a cause for ethical concern is who is funding this research. As already stated, this is not a piece of research carried out on behalf of 'the' ambulance service. Although I work for an ambulance service, I carried out this study as a researcher rather than as a member of an ambulance service and certainly not as an ambulance manager. The second principle I adhered to was that the research data should be collected overtly and there would certainly have been some advantage in obtaining the data covertly. The participant may have been more likely to behave as they normally would have but this would have meant that informed consent could not have been given. Other considerations such as confidentiality are especially important in this study, as confidentiality must be (and was) promised and upheld. That is to say that all data were anonymised so that the identities of the participants were not traceable.

#### **3.8.2 Ethics of data collection and storage**

As discussed in section 3.5.1, all participants signed a consent form that outlined their right to anonymity and their right to withdraw, as the following from appendices C and D shows.

All information gathered [will] be dealt with in the strictest confidence, there will be no way to identify you and only I will have access to the information collected. You are not obliged to participate and if you would rather not be part of the research, you are entirely free to do so. However, if you feel you can participate, please can you sign the attached participant form to indicate that you understand what to expect. You can also decide to withdraw from the research at any time and this will not affect you in any way.

All signed consent forms were scanned and kept in a locked electronic folder on a locked laptop; the hard copy consent forms were then destroyed. All recorded interviews and discussion groups were put into a password locked folder on the password locked laptop and erased from the recording device. Transcripts were only kept electronically and put alongside each .wav recording in the locked electronic folder, alongside the scanned consent form. This proved a useful way of storing the data and are easily deleted when no longer required. Although anonymity is a relative consideration for this study (participants may have been observed talking to me) all clearly identifying data were anonymised.

### **3.8.3 Ethics of analysis**

Ethical consideration was maintained during data analysis and participants were involved repeatedly. Where an earlier interview or discussion group highlighted a theme or topic, this was shared with a subsequent discussion group. These data were shared with the subsequent participants without identifying features, so no names or even when or where the data were collected was shared. However, on occasions I felt that I had laboured some points and that the same topics, especially when talking to the tutors, were part of *my* agenda of seeking information. I was aware that although the data belonged to the participants, this was my research and my identified issue. To minimise my concerns, I tried to let the participants talk about issues that interested them and tried to be perceptive about group interests.

### **3.8.4 Rights of participants**

I had reflected on the issue of a participant declining to speak to me and wondered what student paramedic would be brave enough to turn me down or withdraw their data (knowing the power I hold over their continued employment). To some extent, I believe this was the case with both students and tutors, although one participant did just that. I had observed a student paramedic who then declined to be recorded during interview and as a researcher and, as suggested by the British Educational Research Association guidelines, section fifteen (BERA, 2011), I altered my approach.

However, it was clear that 'Alicia' did not want to have an audio or written recording of anything that she might say that was derogatory about the ambulance service. Although I reminded Alicia of the confidentiality of any discussion, she clearly could only see me as a manager and therefore I respected her decision and concluded the discussion. On reflection, this was an incredibly brave stance to take as I could have penalised Alicia for not talking to me but was heartened that at least one of the students and tutors had understood my assurance of their rights as a participant and used this right to decline to be part of this study. The right to withdraw from the study was made clear on the participant consent forms (appendices C and D) and I reiterated this verbally at the start of interviews and discussion groups. Of course, all of the participants may have taken part to ensure continued good favour from me and may have said what they felt I wanted to hear. However, there were occasional controversial comments during observation and discussion. This seems to indicate that some participants were keen to share their views regarding simulation (and the ambulance service in general) without fear of retribution.

### **3.8.5 Clinical issues**

Ethical considerations were at the forefront of my mind throughout, almost to the point of paranoia. Although I endeavoured to keep ethical issues noted in my field journal as they arose. As an example, any issue with clinical competence (or rather, incompetence) shown by a student paramedic, was reflected on both during and immediately after the observation. Where I would perhaps have previously spoken to either the tutor or student regarding this, using the field journal allowed me to express some frustration without compromising the study. I had assured those taking part that I was not observing their clinical performance but I could not help but feel uncomfortable when a student paramedic was slow with an intervention or spoke to the simulated patient in a manner I felt was not appropriate. Therefore, to highlight these issues in my field journal ensured that I had the opportunity to reflect on these without impacting the ethical assurance I had given. There may also have been anxiety added to the simulation event, merely by my presence, regardless of how much I assured participants that I was not reviewing their clinical performance. This is especially pertinent in a study that suggests simulation causes anxiety. However, no student paramedic mentioned this, although I would have left the simulation room immediately if I had felt my presence was unnecessarily stressful.

### **3.8.6 Dissemination**

The dissemination of data must be addressed and how and where the results of this study are published, on successful conclusion of this thesis. The main paramedicine periodical, the Emergency Medical Journal, tends to have a focus on clinical matters, although there have been some emergency medicine education articles published. Perhaps the most troubling problem with publishing through this journal is that the chief executive and medical director of the ambulance service in which the authors works, must approve any ambulance service article. This seems to have a parallel to me to the student paramedic saying what they felt I wanted hear, do I write something that I want the Medical Director (my manager) to hear? There are some mildly controversial aspects to this study, not least the spotlight shone on the unquestioning acceptance of some structures and systems currently in place. Therefore, it may be more appropriate to disseminate this information in a more neutral way but how this will occur, has yet to be decided. However, the protection of the participants will remain key, the data will remain anonymised and secure, regardless of how the dissemination takes place.

## **CHAPTER FOUR – SIMULATION IN PARAMEDIC EDUCATION**

### **4.1 INTRODUCTION**

This chapter explores the simulation event in the wider student paramedic course of study. It begins with the placing of student paramedic education in context with an overview of current courses and then progresses onto entry to registration and an exploration of higher education and vocational courses of study. The two ambulance services in which the data collection took place have nominally different pathways to become a paramedic, although the courses are more closely aligned than first appeared. The courses have many similarities regardless of basic or advanced content and an example week timetable is given and the percentage of simulation as part of the course of study is also evaluated. Simulation in the student paramedic course is examined, particularly in regard to settings and participants and then there is an exploration of how the student undertakes simulation and the process that occurs before, during and after the simulation event. Finally, there is an examination of simulation as a learning tool and simulation for assessment of skills and knowledge. Therefore, this chapter provides rich, detailed exploration of simulation within the student paramedic's course of study. It aids the familiarization, as discussed in the last chapter, and allows the reader to become a part of the paramedic community, to become a paramedic (figuratively speaking).

### **4.2 PARAMEDIC PATHWAYS**

This section of the chapter explores the pathways available to become a paramedic in the UK and information about the registering and accrediting body and the nature of paramedic employment. Although this chapter discusses the paramedic system in the UK only, for ease of reading this will not be asserted throughout the text and therefore it should be noted that all references to ambulance courses and systems refer to Great Britain and Northern Ireland unless indicated otherwise. There are some differences in funding arrangements between services and countries, particularly the devolved areas of Scotland and Wales. However, the same basic principles of student paramedic development and simulation apply.

#### **4.2.1 Courses**

Historically, as discussed in chapter one, ambulance education courses were either non-existent or limited to cursory first aid skills training, although this changed with the publication of the Millar

report. After the Millar report was published (1966), ambulance staff undertook a more detailed and standardised (but still wholly vocational pathway) to the Millar ambulance qualification. Advanced skills were taught to some of these staff in the 1980s and these skills grew in the 1990s until a clear delineation of staff occurred: those that had extended skills and those that did not. Extended skills generally consisted of intravenous infusion and endotracheal intubation, these advanced staff were commonly called I and I (infusion and intubation) technicians. Throughout the 1990s, much discussion took place in ambulance services to regulate and standardise those with advanced skills. This was to allow for protection of title and relative consistency of skills across services and to provide quality assurance in terms of on-going assessment of those skills. However, it was clearly still skills based advancement in scope of practice, with skills teaching and skills assessment taking centre stage.

#### **4.2.2 Registration**

In 1999, paramedics joined other allied health professions on the Council for Professions Supplementary to Medicine register, which became the Health Professions Council in 2003 (HPC, 2012a). In reality, this move to professional status had limited immediate effect on paramedic courses. The most likely route for the paramedic to apply to the HPC register was via the vocational, apprenticeship model that had existed prior to professionalisation of paramedicine. It is worth noting that paramedics remain the only profession out of the fifteen regulated by HPC, that do not require a bachelor level degree to be admitted to the register. This has led to the move by paramedicine in recent years, to more higher education pathways, as table 4.1 indicates.

*Table 4.1 – Number of HPC validated paramedic programmes (January 2012).*

<b>QUALIFICATION LEVEL</b>	<b>NUMBER</b>
Wholly vocational	14
Certificate	1
Diploma	16
Foundation degree	21
Bachelor degree	8
<b>TOTAL NUMBER</b>	<b>60</b>

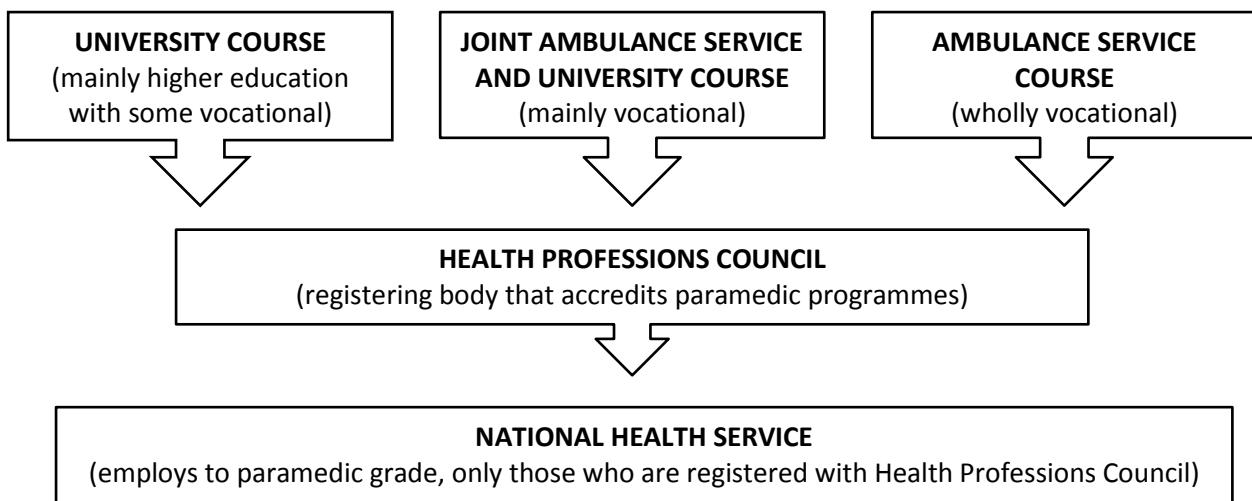
(HPC, 2012b)

Wholly vocational pathways still account for a quarter of all existing paramedic development courses, with the majority of the rest being either foundation degree or diploma qualification. Although there are clearly more pathways than ambulance services (there being fifteen NHS ambulance services but sixty programmes) some services have a range of qualifications for student paramedics to follow. Generally, a student in full-time employment with an ambulance service undertakes the vocational qualification whilst the higher education course is undertaken as a full-time university student (albeit being paid for the operational parts of the course). In both ambulance services in which the data collection took place, student paramedics were employed full-time and had a contractual obligation to successfully complete the course. Vocational and higher education pathways both require successful completion of simulation assessment at stages throughout development to progress with either employment or course of study. An entirely university-based student paramedic is also not guaranteed employment with an ambulance service at successful conclusion of the development pathway.

#### **4.2.3 Routes to become a paramedic**

Section 4.2.2 would suggest that there are two ways to become a paramedic, via a university programme or via a vocational programme. However, in reality, many of the university programmes incorporate a large amount of vocational elements within the programme, run in partnership with an ambulance service. Therefore, it is more correct to suggest that there are currently three routes to become a paramedic in the UK: a) via university, b) via a joint university and ambulance route or c) via an ambulance service route. In all of the programmes identified in table 4.1, there are clearly joint working programmes under the validating ‘umbrella’ of a university but with faculty, significant operational input and most course documents and assessments originating from ambulance services.

*Figure 4.1 – Vocational and university paramedic pathways in the UK.*

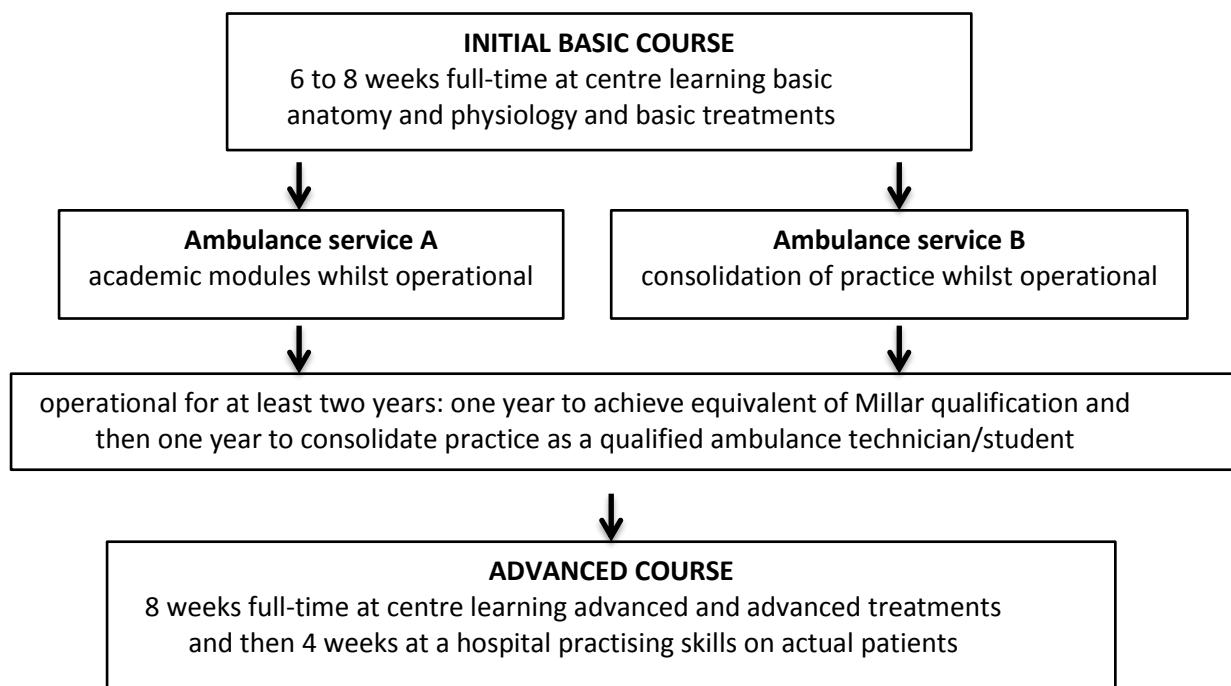


Regardless of route, all paramedics in the UK who wish to apply to the HPC register must have completed one of the sixty programmes as shown in figure 4.1 and table 4.1, to use the paramedic title. As seen in figure 4.1, NHS ambulance services, which employ two-thirds of all paramedics currently registered, will only hire staff that are either currently undertaking or who have completed one of these sixty HPC paramedic programmes.

#### **4.2.4 Courses in which data collection took place**

As explored in the last chapter, participants for this study were (at the time of data collection) undertaking a paramedic pathway in one of three centres in one of two ambulance services. One service had two education centres and one ambulance service had one centre. One service was using an entirely vocational pathway and the other service was using a joint higher education and vocational pathway. However, both programmes looked very similar in terms of the vocational aspect of the whole programme. As shown in figure 4.2, the wholly vocational programme merely omitted the academic element, carried out whilst the student paramedic was operational.

Figure 4.2 – Course comparison in ambulance education centres.



Therefore, if a student paramedic joined ambulance service A at the time of data collection, they would have completed the initial basic full-time course and then would have enrolled on a university course. They would complete academic modules whilst carrying out full-time operational duties. These university modules were done as a mainly distance learning style of self-study and carried out over approximately a year and a half. After an extended period of time (somewhere in the region of two years from the end of the basic course), the student paramedic completed the advanced full-time course and then could apply for registration with HPC. The student paramedic that joined ambulance service B however, completed the basic and advanced courses without the academic aspects carried out whilst operational. The fundamental layout then for the ambulance service student paramedic pathways was: full-time course of study then operational time on road and then another full-time course of study. However, it is important to note that the academic aspects of the course for ambulance service A contained no simulation learning or assessment and therefore it is the vocational parts of the overall paramedic development pathway in which the data collection took place.

#### 4.2.5 Course timetable

Although the basic and advanced courses had obvious differences in terms of content, basic versus advanced treatments for example, they proved remarkably similar. They had the same mixture of taught theoretical sessions, usually given by PowerPoint, skills teaching, practice sessions and simulation practise and assessment. No set learning outcomes exist for UK paramedic programmes, merely paramedic standards of proficiency and standards of education and training; these do not prescribe course content or even length (HPC, 2009). The example first week from one of the programmes, seen in figure 4.3, shows an example of the types of sessions the student paramedic undertakes.

Figure 4.3 – Example week of student paramedic course.

<b>Wk 1</b>	<b>09.00 to 10.30</b>	<b>10.45 to 12.15</b>	<b>13.15 to 14.20</b>	<b>14.40 to 15.50</b>	<b>16.30 to 17.00</b>
<b>MON</b>	Introductions Review infection control	Introduction to enhanced history taking	Respiratory review		
<b>TUES</b>	Cardiovascular and haematology review		Anatomical landmarks	Cannulation and associated skills	History taking (practical)
<b>WEDS</b>	Neurological review		Convulsions/fits		How to answer MCQ/TF/SA papers
<b>THUR</b>	Mock test (resp)	Endocrine review	Adult medical assessment scenarios		Group tutorials
<b>FRI</b>	Mock test (cardio)	Pharmacology review	Review of patient care OSCEs ( <i>tutor led demonstration and peer review</i> )		

This gives an overview of the mixture of teaching methods during the course of study, with the reviews being PowerPoint sessions, self-directed learning or flip chart teaching. When I observed week one in its entirety, all sessions on day one were completed using PowerPoint and some discussion. Day two comprised PowerPoint presentation for the first and second session, with a practical demonstration of cannulation given and then a tutor-led history-taking practical using a student paramedic as simulated patient. On day three, all sessions were given using PowerPoint presentation. On day four, the students sat a written paper and then had a PowerPoint presentation. Scenarios were then set up in separate rooms, with a tutor in each room, and the student paramedics took it in turns to go into each room to undertake simulation practise. At the conclusion of day four, the student paramedics were split into groups and had tutorials with their named tutor. On day five, the students sat a written paper and then had a PowerPoint presentation. In the afternoon, the tutors showed the group how to carry out a cardiac arrest simulation and then

the students split into small groups to practise. This, I feel, was an accurate representation of the entire course, except for periods at the middle and end of the courses where days were set aside for written and practical assessments. The practical assessments were skills-based or simulation-based. There was some more simulation practise timetabled in the week leading up to the assessments but the general content of the course remained the same. As a student and then tutor and then manager in ambulance services in the UK and overseas, I would estimate that I have participated in approximately ninety paramedic courses.

#### **4.2.6 Simulation as part of the course**

An exploration of the total amount of simulation learning and assessment over the entire course of study that I observed also proved useful. To calculate the percentages, seen in table 4.3, I analysed the timetables for ambulance services A and B. I counted the total hours shown in the curriculum and then the hours that were marked as simulation learning and the total hours marked as simulation assessment. As I have an intimate knowledge of both courses, this indicative time echoed actual simulation activity.

*Table 4.2 – Time and percentage of simulation as a proportion of the course.*

	<b>AMBULANCE SERVICE A</b>	<b>AMBULANCE SERVICE B</b>
Simulation learning	75 hours (25%)	75 hours (29%)
Simulation assessment	45 hours (15%)	37.5 hours (14%)
Other	180 hours (60%)	150 hours (57%)
<b>TOTAL COURSE TIME</b>	<b>300 hours</b>	<b>262.5 hours</b>

These timings must be viewed with some caution in that the percentage and hours are the total as part of the entire course. So an individual student in ambulance service A will not typically undertake forty-five hours of simulation assessment, the timetable shows forty-five hours *in total* for simulation assessment. The students tend to take it in turns to undertake simulations and how long they wait is dependent on a number of factors including availability of tutors, equipment and suitable rooms.

## **4.3 THE SIMULATION IN CONTEXT**

### **4.3.1 Environment**

In both of the ambulance services I visited, dedicated education centres existed for the development of ambulance staff in pre- and post registration and specialist courses. In the three centres were a suite of rooms for staff and tutors, which included lavatories and rest areas and offices for managers and tutors. The general layout of all three centres was similar, with at least one large teaching room and several smaller ‘break out’ areas where simulations took place. No simulations I observed occurred anywhere outside either the large classroom or smaller areas, although occasionally simulations do occur outside in the centre grounds, weather permitting.

The settings simulated during scenarios may not accurately reflect real life. During winter months, daylight hours are proportionally fewer than night hours but no simulations I have observed have taken place in darkness. This may not be relevant when going into an artificially lit patient’s house but some emergency calls take place in relative darkness (road traffic collisions at night as an example). The same is true of simulations occurring outside; admittedly I have seen and led scenarios outside but this has only been when the sun has been shining when it seems more pleasant to carry out simulations in the fresh air. Obviously emergency calls take place at all times and in all weathers but this is not reflected in simulations. This may be for a very valid reason; to bring student paramedics and tutors in for an evening has a cost implication, with an uplift of 25% of pay for every unsocial hour worked.

### **4.3.2 Staffing**

Simulation is generally carried out with two student paramedics as the simulated ambulance crew; this represents the historic arrangement of two ambulance staff on a large ambulance vehicle. There are two main types of vehicles used in ambulance services: a) a typical large ambulance, staffed by two crew members and suitable to convey patients and b) an ambulance car, staffed by one clinician who provides a rapid response but is unable to transport a patient. The two-person crew, or double manned ambulance as it is tellingly called, is comprised of any permutation of clinical grade: paramedic, student paramedic, emergency medical technician (EMT) and emergency care assistant (ECA). There is some commonality in these grades nationwide and the same basic principles of clinical grade apply with some small change in title and pay.

However, there appears to be no definitive crew grade outline for these vehicles and cars. Vehicles may be staffed by all grades of staff except new students, who are deemed qualified after one year of service. Emergency medical technicians are ambulance staff with the equivalent of the old style Millar qualification. They comprise a significant proportion of the operational workforce and emergency care assistants (although still relatively rare) are becoming more embedded in some ambulance services. There are no particular staffing requirements for either cars or traditional ambulances and all grades of clinician can, in theory, work on both style of vehicles and therefore, either alone or as a two-person crew. However, staff on a two-person ambulance have specific duties, as either attendant or driver. This is seen somewhat in the simulation event, without the actual driving. As seen in table 4.4, the duties of attendant and driver appear uneven at first glance, although the driving element is significant operationally but absent in the simulation experience.

*Table 4.3 – Two-person ambulance crew attendant and driver duties.*

ATTENDANT	DRIVER
(crew member is said to be ‘attending’)  Will liaise with control centre by radio. Will walk into patient location first with equipment. Will assess and treat patient. Will liaise with the patient to formulate a care pathway. If patient needs transporting to hospital, will travel in the back of the ambulance monitoring the patient and liaising with relatives. Will hand over the patient to hospital staff.	(crew member is said to be ‘driving’)  Will drive to an emergency call. Will help take the bags to where the patient is. Will work as directed by attendant. Will help convey patient to the ambulance. Will drive ambulance to hospital. Will drive to the next call or standby point.

A two-person crew will typically take it in turns to attend or drive, with little overlapping of the role during the emergency call itself. However, it is uncommon to have staff maintain either the attendant or driver role for the entire shift and there is most often a swap of duties agreed by the crew at the start of the shift. This is shown in table 4.4.

*Table 4.4 – Two-person ambulance crew share of duties.*

<b>Job about</b>	crew swap duties between calls.
<b>Half shift about</b>	crew swap duties half way through the shift.
<b>Shift about</b>	if working at least two shifts together, crew will swap duties on alternate days.

Therefore, the public misconception that it is the paramedic that attends to a patient and the less qualified emergency medical technician or student that drives, is not entirely correct. As seen, there is a swapping of duties to make the shift less onerous and to maintain sharpness of focus and attention. Both roles can be demanding and sometimes require a change of role to aid concentration. However, if the patient is ill or injured to such an extent that they require paramedic intervention, then the paramedic has a duty to stay in the back of the ambulance with the patient. There are also occasional jobs where two crews may be required or more than one clinician in the back of the ambulance to allow for multiple interventions to take place at once; for example the rare cardiac arrest patient that requires transporting to hospital.

#### **4.3.3 Simulation as a single clinician**

I did not observe a simulation during the data collection that had anything other than two student paramedics simulating a two-person crew. However, (occasionally) simulation is carried out as a single clinician. This is shown in the pictures at the beginning of chapter one of this study and perhaps more closely represents the growing move in emergency care to single clinician immediate response in an ambulance car. A two-person ambulance crew will generally be called after initial consultation if a patient needs conveying to hospital. Certainly my own experience in simulation is as a two-person crew and I work almost entirely in a car on my own. In the simulations I observed, the two-person crew were not entirely a team and the lead student (the one simulating the attending role) tended to work on their own with limited help and input from the simulated driver. In the observations, the tutor always looked at the lead student in the simulation and expected the lead student to do all of the assessing and treating of the simulated patient. The simulated driver appeared to do little more than carry equipment and work as directed by the lead student, not too far from the driver role in real life. Therefore, the apparent lack of simulation as single clinician and significantly more time as part of a two-person crew may not matter. As seen, the attendant attends whether they are working alone or with another clinician.

#### **4.3.4 How the simulation is arranged**

In all of the simulations observed during data collection, the simulated patient was a student paramedic on the same course of study as the simulated crew. The student acting the part of the patient was given the outline for the simulation setting; in other words, what was wrong with them as the simulated patient. The ‘patient’ was chosen at random from the students who were not

taking part in a simulation at that time and this is reflected in most simulations. As discussed in chapter one, where potentially harmful interventions are needed, such as during advanced life support which requires endotracheal intubation, intravenous infusion and defibrillation, the simulation is carried out using a mannequin. Emergency calls that require the significant interventions outlined above, are relatively rare and may explain the comparatively fewer mannequin simulations in a course of study. The final participant in a simulation is the tutor and there appeared to be no relationship between which tutor ran which simulation. Tutors either agreed amongst themselves or were managed by the course lead and the programme appeared to allow time when the entire student paramedic and tutor group were all occupied with simulation. Simulations were set up in several rooms, with a tutor taking one room for the duration of the simulations for either the morning or afternoon. Students appeared to rotate round the rooms and tutors in no specific pattern, although some students appeared to favour some tutors more than others. Therefore, although the simulation settings may not accurately reflect actual emergency call settings, the participant roles may echo those seen on an operational ambulance.

#### **4.4 THE SIMULATION EXPERIENCE**

This section of the chapter explores how the student paramedic (and to a much lesser extent the tutor) carries out simulation. If the simulation event is split into stages and for the purposes of this study it is, there may be three separate stages to the scenario. The first part is the preparation leading up to the simulation, this may be said to be from when the student paramedic knows they are to undertake a scenario (when they start a course) until they are called into the room where the simulation is taking place. The next part of the simulation may be from when the tutor explains what the background of the simulation is to the conclusion, including feedback received from the tutor. The final aspect of the simulation event may be said to be the informal reflection on the scenario that has just taken place. Therefore, the next section of this chapter explores how the student paramedic and tutor learn how to undertake each stage of the simulation. The information for this section relies heavily on my personal experience of simulation and therefore accounts for the change in tense in some of the following parts.

##### **4.4.1 Preparation**

Although the preparation for the simulation could (in theory) begin as soon as the student paramedic knows they are going to be put on a course of study, in reality the preparation begins

when the student starts the course of study. The student will be introduced to simulation during the first week of the course when the tutors explain the assessment processes. However, there appears to be no written instruction for undertaking scenarios in course documentation or paramedic texts. Having reviewed both services' course materials, many paramedic texts and having experience of many ambulance services globally, I could not see any written outline of simulation beyond the written management of a patient. There may also be an oral tradition among staff, paramedics will talk to students and students will talk to each other about simulation and this may be how they learn to undertake simulation (or at least learn beyond the management of a patient).

#### **4.4.2 During the simulation**

The simulation tends to begin, in both the student and tutor mind, at the time that the student paramedic is called into the room and is given an overview of the patient. The student observes a fellow student usually sitting in a chair (but occasionally in another position) and the tutor gives brief details as to what the simulated event is. A tutor will give similar details to those that would be given by a control centre, for example that the student is attending an elderly male with chest pain. The student simulating the patient may not be elderly and may not even be a male. However, it is accepted that the student paramedic must suspend disbelief for the purposes of the scenario. After the tutor gives an outline, there is a definite beginning to the simulation. The tutor checks that the student is ready to start the scenario and indicates that the student should begin. The student paramedic approaches the simulated patient in the same way, using the same words. Student paramedics are taught to treat the simulated patient as they would a real patient, so the scenario looks and sounds on first observation as being almost identical to actual emergency calls. The student seeks baseline observations verbally from the tutor (these are parameters such as blood pressure) rather than from the simulated patient, but the student still mimics taking a pulse or putting on a blood pressure cuff. These simulations can either have a strict framework or be fairly unstructured. When the simulation had reached a natural conclusion, so when all interventions had been carried out and the 'patient' had arrived at hospital and a hand over to the tutor acting as triage nurse had taken place, the scenario stops momentarily. The tutor then proceeds to feedback to the student paramedic. After feedback has taken place, the student paramedic leaves the room and sometimes the simulated patients stays for the next student to practise on. Sometimes the student that had just carried out the simulation is asked to be the patient and sometimes an entirely new student is either asked or volunteers to be a simulated patient. The new simulated patient does not necessarily have the same illness or injury as the previous one.

#### **4.4.3 After the simulation**

In my experience, once the student paramedic has left the room in which the simulation occurred, there is some informal discussion among student peers. Generally, there are more student paramedics than set-up scenarios and tutors, so often students are waiting in a common area and this is where discussion takes place. Questioning of performance and reflection of the simulation occurs, although no further tutor involvement takes place unless specifically requested by the student.

### **4.5 SIMULATION FOR LEARNING AND SIMULATION AS ASSESSMENT**

One of the fundamental themes of this study is the relationship between simulation as a learning tool and simulation as an assessment tool. In both ambulance services sampled as part of this thesis, formative and summative assessment via simulation took place. This overview of simulation assessment requirement from ambulance service A reflected to a great extent the simulation assessment overview of ambulance service B; this is seen in table 4.5.

*Table 4.5 – Overview of simulation assessment in ambulance service A.*

<b>SIMULATION</b>	<b>ASSESSMENT</b>
<i>1 x advanced cardiac life support scenario</i>	<i>Entirely pass or fail, student has a single re-attempt prior to failure of the entire course.</i>
<i>2 x Objective Structured Clinical Examinations (OSCEs)</i>	<i>Entirely pass or fail, student has single re-attempt prior to failure of the entire course. OCSE (1) is in week 4 and OSCE (2) is in week 8; OSCE (1) must be passed to progress beyond week 4.</i>
<i>4 x satisfactory scenarios picked by a tutor from a list, no pre-knowledge by student</i>	<i>No limit to amount of times student may attempt to pass a satisfactory scenario but must have completed at least 2 to progress past week 4 of the course.</i>

Possible censures, up to and included termination of employment, are not merely a possibility. Termination of employment after assessment failure is a real and relatively common occurrence in ambulance services. There are specific simulation assessments to be passed, although the scenarios that require two satisfactory ratings before the four-week limit seem to depend entirely on the

forcefulness of the student paramedic in getting simulations completed. On review of two random student records, I observed that although both students had passed the necessary two simulations, one student had undertaken seven scenarios with four passes and one student had undertaken twelve scenarios with three passes. It is important to remember that all of the simulations I observed were learning scenarios and not assessed in any way. They were evaluated and feedback was given, but these simulations had no effect on course progression.

#### **4.6 SUMMARY OF THE CHAPTER**

In conclusion, this chapter gives an overview of paramedic education pathways and courses and the role and scope of simulation within the course of study. Although there are differences between ambulance services and programmes, the same fundamental principles apply. Whether the course is vocational (in other words entirely based on road using an apprentice model) or based nominally entirely at a university, similar structures are present. Simulation comprises a significant proportion of any paramedic course and the preparation before, performance during and reflection afterward are similar, regardless of pathway undertaken. Admittedly, consequences if simulation is failed appear different (loss of employment versus removal from the course) but consequences there certainly are. A significant amount of simulation must be passed to allow a student to become a paramedic and a paramedic must be registered with HPC to acquire a job in an ambulance service (as a paramedic). Therefore, simulation is an integral part of becoming a paramedic and more importantly, simulation assessment is integral to becoming a paramedic. It becomes clear that simulation is viewed with some trepidation and this is explored further in the next chapters of this study.

## CHAPTER FIVE – PERFORMANCE AND SIMULATION

*Well we're playing a part, aren't we?*

*(John)*

### **SIMULATION (IT'S ALL AN ACT)**

*The show is about to start, the actor waits in the wings for her cue. She is wearing her magnificent costume, her green uniform; everyone will see the role she is playing as soon as she comes on the stage. She runs through the lines from the script in her head, taking comfort from repeating the same phrases she has performed so many times before. There is occasionally a slight change in the script (just to keep it interesting) but mostly just the same words in the same tone. Well that is the way the script was written by the tutor, and the playwright knows best after all.*

*There are murmurings in the crowd; the tutor audience is sitting, waiting. She tries to catch his eye to see what reception she will get. Her co-star is standing beside her ready to play the part of crewmate to her, but he knows he has no part to play other than as a prop. He is for show only and will be no help to her if she 'dries'. He gets a few lines, but he is no more than a minor player at most. She gets her cue to go on, picks up her equipment and walks centre stage with confidence; the confidence of someone trying so hard to appear confident. She takes a deep breath and launches into the script, the lines coming out clear and fast, the audience listening closely to what she is saying. She speeds up now as she is coming to the end of the reading, knowing she is close to finishing, relaxing into the words and poses she is performing; a dance with others on the stage.*

*Finally, her performance is over and she waits, desperate for the audience to show their appreciation. Will the tutor applaud her, confirm that she has performed well or will they boo and hiss and make her never want to perform again? Thankfully the audience cheers and she feels like a star! She leaves the stage, puts her props down, hugs her co-star (who tells her she was great) and she goes and re-reads the script and prepares for the next performance.*

*Well, we're acting; we're play-acting a scenario. The patient's acting and so therefore we're acting with what we're actually going through.  
Although we will be doing it for real on the road and that's the job,  
at the moment we are acting, it's drama.*

*(Claudia)*

## **5.1 INTRODUCTION**

This chapter explores the idea of ambulance simulation as performance and originated primarily because of my own perception (over many years) of the use of performance language by students. This notion of performance may add to the anxiety the student paramedic feels about simulation and is explored in this chapter. I felt there was a relationship between performance and student paramedic simulation prior to undertaking this research but the in-depth analysis of this theme has allowed me to explore this idea in a structured way. There is some existing evidence on presenting a different face for different purposes and in different situations. There is also some literature on ambulance operational work as an act but there is limited literature on simulation as performance. There has been some literature published regarding performance in education and this is explored in the next section of this chapter, no evidence exists regarding student paramedic development and its relationship with performance. This shows a clear gap in the literature filled to some extent by this study. However, some caution must be noted as the homonym performance in ambulance service terms generally means how well a person or system is working. Performance indicators such as how quickly an ambulance arrives or if a patient survives a cardiac arrest are familiar to most ambulance staff. When reviewing the evidence on ambulance and performance, the performance most literature refers to is the performance of a task or procedure or system.

The vignette at the beginning of this chapter shines a spotlight (to use performance language) on the parallels between the student paramedic undertaking a simulation and the actor performing in a play. This is seen in more overt data in this chapter such as the language used by students and tutors during interview and in more subtle considerations such as the costume aspect of ambulance uniform. The use of these vignettes at the beginning of chapters five, six and seven and particularly the one at the start of this chapter, grounds the concepts and themes within an example fictional simulation setting. All give an outline simulation and relates it to the integral parts of the chapter. In the case of chapter five, the idea of a script used by cast who are playing a role within the performance setting is seen in the vignette at the beginning of the chapter.

The chapters prior to this one have provided a base on which to build the following three chapters (and of course the concluding chapter). Chapter one provides an introduction and gives the research questions on which the study is built. Chapter two gives a general overview of literature published on broad simulation topics and shows where the gaps in the evidence are and how this study goes some way to filling these gaps. Chapter three explores the research design necessary for exploring

the gaps identified in chapter two, by developing in-depth data from which theory may be developed. Chapter four allows the reader detailed context of the ambulance service with which to view the next three chapters, which are the data analysis sections of the study based on themes identified. Chapter four gives the reader the chance to inhabit the world of the student paramedic within the organisation and sets up the exploration of themes in chapters five, six and seven. As discussed in chapter three, chapters five, six and seven are theme-grouped sections based on data collected. Chapter five explores the dramaturgical aspects of the data, chapter six evaluates the anxiety felt by those involved in simulation and chapter seven investigates control and power aspects of scenario learning. Chapters five, six and seven look at aspects of paramedic education that appeared during data collection but grouped together in clear themes. Therefore, the next three chapters provide the ‘fear, performance and power’ as seen in the title of this study, which required the earlier chapters to provide a context to the next three.

The idea that performance occurs in everyday life was first formally explored and presented in the 1950s by sociologist Erving Goffman. Goffman himself acknowledged that this idea may have its basis in centuries old literature, most visibly and popularly in the works of William Shakespeare. The familiar themes and theatre metaphors are undoubtedly evident throughout his work. The character Jaques speaks these lines from As You Like It:

All the world's a stage,  
and all the men and women merely players;  
they have their exits and their entrances,  
and one man in his time plays many parts ...

(Shakespeare, 1997, act 2, scene 7, lines 139-142)

One of the meanings of this passage, that everything is preordained, may have little direct impact on this study; however, the symbolism of roles and performance is clear. Goffman’s (1959) seminal work on people showing different aspects (different masks) was the first to closely examine the notion that people may present alternate facets of themselves depending on the situation. This work reviewed a wide range of settings, classes and occupations; it briefly discussed medicine, albeit more the mask the patient wears in front of a physician than vice versa. One of the key concepts in Goffman’s work is the question of whether people act a certain way unknowingly because “the tradition of the group requires this kind of expression” (Goffman, 1959, p. 18). There may be a possibility that the students unwittingly act the part of a paramedic because that is what the ambulance service and specifically the ambulance education culture, expect of them. We may, as an

ambulance community, encourage this act to allow for students to feel comfortable in the culture or to ensure that the culture feels comfortable with the student. Impression management, the notion that people manage their settings and performances to give a specific impression to others can be clearly seen in the data.

The data collection occurred with my preconception that simulation had a basis in performance. Although I did not highlight performance or initiate a performance discussion as part of my interviews, I was pleased that several students made mention of this relationship without any promoting. When the student mentioned issues regarding performance, I explored this further and this exploration generated a number of fairly easily coded themes shown in the chapter headings: script, cast, role and setting. The overall concept and themes came from the students themselves rather than literature but an on going data analysis, literature review, data analysis, literature review cycle took place.

## 5.2 SCRIPT

*You get used to your script, your spiel, your language, the situation. The possibilities that could be thrown at you.*

(Claudia)

This section of the chapter discusses the notion of script in student paramedic education. Scripts are recognisable to most people; we generally have a set of phrases that are usually used habitually until we feel that a change is needed. There is also some suggestion that scripts are not rigid constructs as they are not usually followed in *exactly* the same way every time. It has been argued that scripts are influenced by extrinsic effects such as environmental factors and individual goals (Cosentino et al., 2006). As an example, we tend to use the same greeting phrases with the same set of people. When asked how we are, we generally reply with the same phrase regardless of how we may truly feel. We tend to answer differently with different people and in different situations and this would be a familiar concept to most. The questions that comprise the script the student paramedic used during simulations are taken from standard clerking documents and suggested dialogue found in nearly all paramedic texts. Example scripts are given in section 5.2.1 and these could be used interchangeably for most simulation situations. However, how these scripts are used in the knowledge construct (and if they are at all) is explored further in this chapter.

### **5.2.1 Phrases used during simulation (the student paramedic)**

Michael observed, “I just know what I’ve got to say before I go in [to the simulation], I’m running through my script in my mind” and it became apparent that the student used the same phrases in the same order during simulation:

*Are there any dangers? - Where am I (house, outside, work place etc.)? - What does the scene look like? - Are there any clues as to what has happened? - Are there any signs of trauma? - Hello, I'm Natasha from the ambulance service, what can I call you? - What seems to be the problem? - When did that happen? - Do you have any pain? - Are you on any medication? - Do you have any allergies? - What is your previous medical history? - Is there anything else you'd like to tell me?*

The idea that a script of pre-determined phrases (both questions and answers) is used is quite valid, tutors advise on crucial phrases to help the students know what to say to a patient. Zach identified that “it helps [the students] to learn if you keep going over and over the same thing”. The student could almost use the same scripts for any simulation and apart from subtle differences specific to an illness or injury many of the same phrases (or parts of the script) could be used during the simulation. These questions can be used by students regardless of simulation context and I use these questions myself when working operationally and dealing with patients. There would be limited specialist questions based on some of the simulated patient answers but the standard questions remain the same. Even when a patient answers one of these questions and further investigation is needed, a structured script is used. As an example, if a patient indicates that they are in pain (note the question above, ‘do you have any pain?’), the mnemonic PQRST-A is used:

**P**inpoint/provokes/palliates – *Where is the pain, can you point to it with one finger and does anything make the pain worse or better such as moving or breathing in or out?*

**Q**uality – *What does the pain feel like, is it stabbing, crushing, dull, sharp?*

**R**adiates – *Does the pain go to anywhere else or does it stay in one place?*

**S**everity – *On a pain scale of zero to ten, with zero being no pain at all and ten being the worst pain you've ever had, what number would you assign the pain you have now?*

**T**imings – *Did this pain come on suddenly or over minutes or hours and does it come and go or is it there all the time?*

**A**sociated symptoms – *Do you have any associated symptoms such nausea, light-headedness, breathlessness?*

(Sanders, 2001)

### **5.2.2 Phrases used during simulation (the simulated patient)**

The simulated patient has very little to say during the simulation; they have an almost pre-determined script based on the prompts the tutor gives. If the simulated patient is primed to simulate someone having an acute myocardial infarction (heart attack) they will answer the questions in a set way. Where is the pain? "*In the centre of my chest*" Does anything make the pain worse or better? "*No*" What does the pain feel like? "*Crushing*" .... etc. These are based on expected patient signs and symptoms, so one would expect a heart attack patient to have crushing central chest pain and in fact 80% of heart attack patients do have this symptom (Sanders, 2001). There is little room for improvisation, as this would not accurately reflect common signs and symptoms found in paramedic texts. The student can and in fact does learn only the parts of the script that are necessary and as Emily noted, "[the script] gets easier the more you do it"; in other words, repeating the script aids comfort in the process. It seems that 'drip-feeding' parts of the script to the student throughout the course prepares the student for most paramedic encounters and there may be a subconscious adopting of script based on basic frameworks. These frameworks are recognised medical tools such as PQRST-A already mentioned and common signs and symptoms found in texts such as clinical guidelines (JRCALC and ASA, 2006). However, the dual role of scripts suggests there may be a synchronisation of two aspects in the simulation event. Abelson's (1981) theory would suggest that to *behave* the script would rely on a repetitive pre-determined set of speech patterns but to *understand* the script would assume the cognitive retrieval of previous events (and not necessarily simulation events).

### **5.2.3 Understanding**

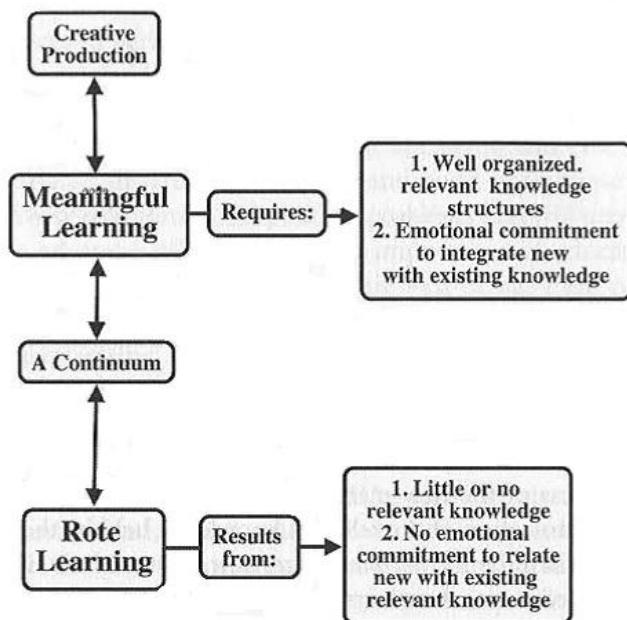
The discussion regarding the use of scripts in simulation requires some exploration of whether using a script promotes understanding or merely memorisation or indeed whether this is relevant when analysing paramedic education. The paramedic registering body standards of practice indicates that:

A paramedic *must*: ... be able to undertake and record a thorough, sensitive and detailed assessment, using appropriate techniques and equipment [and] be able to analyse and critically evaluate the information collected [and] be able to use research, reasoning and problem-solving skills to determine appropriate actions.

(Health Professions Council, 2007).

This would suggest that HPC places importance on an understanding of the process, the so-called deep learning of Marton and Säljö (1976). Some texts argue that memorising skips over the knowledge required to truly comprehend, as the overview of meaningful learning shown in figure 5.1 shows.

*Figure 5.1 – Rote learning continuum.*



(Novak, 1998, p. 24)

There is a difference in educational terms between memorising and understanding and the tutors felt that the simulation experience allowed the student to *understand* patient care. Wayne stated that “[the students] just go through [the script] to help them while they’re learning why they’re doing it” and Zara noted that it was “the understanding bit that makes them a paramedic”. Nevertheless, the students may have a different perspective on this understanding aspect of learning. Andy asked, “why [do] we need to know all this; I mean take the cardiac cycle, who cares about that? I only remember it to pass the exams; it’s not going to help me on road”. There is some truth to this; memorising aspects of quite dense anatomy and physiology may only be useful to pass examinations. It also is not part of the script necessary when dealing with the patient and it may just be part of the script of passing exams. Andy learns the script of the cardiac cycle as a way of ensuring progression on the course. For him, it has little relevance beyond memorising in case a cardiac cycle question comes up on a written examination. However, the timings of the cardiac cycle are in fact quite useful when evaluating cardiac disorders such as atrial dysfunction, a precursor to a range of potentially fatal conditions. This sentiment, that knowledge is memorised to pass exams,

seemed to be shared by some of the other students. Emily suggested “we don’t have to understand it, as long as we can answer when [the tutors] ask us about it”. This questioning by the tutors occurs generally as a question and answer, not an exploration. For example, a question may be “how long is the second phase of the cardiac cycle”? The answer would be “0.53 seconds” and that would be the end of the question and answer session, without further exploration. The script would be as above without improvisation or alternate answer, the question is as it is and so is the answer. This suggests, if the student can be compared to a computer programme, it may be just sufficient to input the data and wait for the software to generate the outcome based on fixed parameters.

#### **5.2.4 Memorising**

It can be argued that some rote learning is not only useful but also necessary when considering the breadth of types of illness and injury being dealt with by the student paramedic. Although Andy was clear about his feelings when memorising the cardiac cycle, Emily argued that memorising some illnesses and treatments, almost in a recitation way, may help to make use of the vast lists of signs, symptoms and treatments available. Emily mentioned “I just go bang, bang, bang with a chest pain; right you got this, this and this and then oxygen, GTN, Aspirin, Morphine, you know”? Emily used these memorised symptoms to generate memorised treatments and Dan identified that “we can’t get it all in [in a course of study], as long as we know what to give the patient”. Yolande stated that “I use [the same phrases as the students] myself when I’m on road, it helps to point me in the right direction” and Bryony assumed that “[the script] helps us to know what we’re going to do”. Therefore, the use of standard phrases can help the student memorise trigger questions that generate standard answers that (in turn) generate a set of treatments or trigger questions that lead to treatments.

Therefore, to maintain the dramaturgical theme of this section of the thesis, to perform a piece of music or a dance may not necessarily require understanding, merely the memorisation of notes or steps in a particular order. However, memorising and understanding do not necessarily have to be opposing concepts; Kember (1996) suggested that understanding and memorising could co-exist. Understanding could be regarding as knowing what to memorise, what not to memorise and what to delete from the long-term memory. This is shown in Andy’s quote about the cardiac cycle used in this section, he knows that he needs to memorise the timings to get through the exam and therefore, shows understanding of the education system in which he is placed. In other words, that he needs to memorise the timings to pass the examinations, rather than the cardiac cycle itself. That

is not to say that he does not understand, merely that his understanding of the cardiac cycle is not assessed.

### **5.2.5 Social script**

Some exploration of the social script theory is required and both tutors and students recognised the script as a useful social tool. The social script theory, related to simulation events, would suggest that students are merely using the existing script to build the social role of the paramedic. That it is the social constructing of the personality that makes the paramedic (St Clair, 2008). Vygotsky (1978) argued that adults learned through social activity, that the interaction with other people (in this case the tutors and student colleagues) aided cognitive development and construction of paramedic self, different from student self.

### **5.2.6 Paramedic script**

Although, to join the ambulance service a basic level of spoken communication is required and tested at interview, Ian implied that simulation taught the paramedic style speech required:

I know there are younger [students] who say ‘oh, I’ve never spoken to a patient’ so, from that point of view, it’s an essential part of every training course. You’ve got to have scenarios, you’ve got to have interaction because it may be that we just say, for example, take scenarios out of it, pass the course 100%, go out and meet the first patient, you can’t talk to them.

Natalie felt that having the same words and phrases for a simulation “[made] sure I knew what I was going to ask”. Claudia identified that simulation is “good in the way that you start to understand the language that you’ve got to use” and Katie argued, “I haven’t done a lot of [scenarios] before because, even though I have sort of sat in the back with patients, but you don’t learn the skill of the questions to ask”. Therefore, this learning of the style of paramedic speech is regarded as one of the goals of simulation learning. The student paramedic must learn the paramedic script and the simulation event helps to develop this.

## 5.3 CAST

*If we don't get the students working as a team during the course, they end up failing.*

(Yale)

Teams are groups that work together to achieve a common goal and on first analysis it may seem that during a course of study the students are collectively one team and the tutors an opposing team with similar goals (the primary goal being to get students through the course). Teams generally work together in an overt way; consider members of a sports team battling against the opposing team or staff working for a supermarket. This is best seen during simulation in the teams of paramedic and tutor; however the team (or cast) involves more complex dynamics than this simplistic tutor and student delineation would suggest. As explored in this section, role demarcations are blurred in some aspects of the simulation event but clearly fixed in others. The tutor and particularly the student paramedic, acts a number of roles during simulation. As explored in chapter four, on first review it would appear that the cast during the simulation event consists of four people:

- i. The simulated paramedic,
- ii. The simulated crewmate,
- iii. The simulated patient,  
(All three roles usually played by student paramedics),
- iv. The tutor.

### 5.3.1 The concept of team

Perhaps the most important exploration in this part of the chapter is whether the concept of team is even applicable in simulation events. It seems to me that team working in the *ambulance* definition of the word, generally does not occur during the simulation experience. As outlined in chapter four, the majority of paramedics in the UK work on a double manned ambulance. This is reflected somewhat in the simulation experience where two student paramedics make up a simulated crew. Helen identified that “when you work on road, you’re a team aren’t you? There’s generally two of you and you do things between you and so there’s more communication. Whereas here, you’ve just got to say it yourself”. Helen also suggested that the team working that occurs on road does not occur during simulation because only the student attending is evaluated. This would indicate some members of the team are not as key to the team as others but the concept of team is still applicable. The theory of team roles has a long history but perhaps the most well known framework is that of Belbin (1993) who set out nine distinct characters that were needed to make a team work together

effectively. However, this fixed set of types and interactions may have limited relevance to the much smaller team seen in the simulation setting.

### **5.3.2 Evaluation in the team**

The student paramedic is the member of the team who is evaluated when they perform as a simulated paramedic during the simulation event. So in the team of four, although the students are three of the four cast members during the simulation, it is only when they act as the simulated paramedic that they get evaluated. “It’s just when you’re lead [that you get evaluated]” stated Ivor and Gordon noted that “it’s not too bad because it’s only when I’m attending that they’re marking me”. The simulated patient, as discussed in 5.2.2, has very little input in any way during the scenario beyond the (tutor-guided) acting of a sick or injured patient. The student paramedic also performs the role of the simulated crewmate but again, has very little input beyond very simple physical interventions under the direction on the student paramedic. Gordon admitted “I don’t do anything unless [the simulated paramedic] tells me what to do, he’s the one being assessed”.

### **5.3.3 Status**

Dan felt that even if he saw the tutors outside of the education setting they would still “be the boss, wouldn’t they”? Frank, when asked if he felt that the tutors were of a different status to students, stated “they’re the tutors, they up there and we’re down here”. However, the tutors were less likely to see this difference in status or less likely to place significance on the difference in status; Wayne noted that “[the tutors] are different”. The nature of status in teams has been explored for many years; Moore analysed the status generalisation phenomenon and noted that “it appears that prior status differentiation among group members leads to patterns of influence, which clearly parallel the status structure, even when such differentiation has no apparent relevance to the task confronting the group” (Moore, 1968, p. 48). In fact, a clear hierarchical structure existed in the education centre and linked to this notion is the concept of differing status *within* the centre. The students have their areas in which to rest, check their e-mails and socialise, the tutors have their areas and little or no physical intermingling occurs. Claudia noted that “[the students have] all worked together and we all support each other, we’ve just grown as a group I think”. When asked if she felt that the tutors were part of that group, Claudia emphatically replied “oh no”. The tutors also highlighted their group as a separate clique; Yale stated students and tutors could *not* share rest areas as “we need to keep a bit of a distance ... so that [the students] know we’re in charge”. During

my observation of interactions, the students all appeared respectful and engaging and the tutors all appeared to be of a perceived higher level. I noted that a group of students swore freely whilst having a conversation (as is the wont of ambulance staff) but drastically altered their manner and behaviour and did not use profanity when a tutor came and stood with them. Whether this perception of greater status afforded to tutors is the student's or the tutor's (or both) may change according to the situation. However, it was clear that the tutor and student inhabit different worlds, different rest areas, a different place in the ambulance service. This issue is explored further in chapter seven.

#### **5.3.4 Student perception of the tutor team**

There is some argument that the power that the tutor holds, the power to pass or fail the student, may afford them a judged higher status. In the team of tutor and student, the tutor is not seen as the 'bad guy' in that although they criticise performance they do this in a gentle and supportive way. John suggested "the tutors don't want to fail you at all; there's absolutely no way they want to fail, they want to see you progress". Katie singled out the tutor who had facilitated her simulation before making judgement on the tutor team, saying "[the tutor] has been super, [the tutor team are] lovely people". David made the connection between how a simulation atmosphere could be related to a tutor's behaviour, "some tutors can make [scenarios] a relaxed environment" and Will felt "you can make the scenario good for the student or you can make it a horrible experience". In my discussion with the students, some talked about previous bad experiences with tutors during simulation but would not be drawn on talking about bad experiences on their present course of study. This may be because the students felt they had no bad experiences or it may have been that the students said what they thought I wanted to hear as head of education. Interestingly, the power and increased status of the tutor may be what gave the students the overwhelmingly positive perception of the tutors (Fragale, Overbeck and Neale, 2011). As with the status concept, a greater exploration of this concept of power is found in chapter seven of this study.

#### **5.3.5 Tutors becoming students**

The transition from tutor to student was experienced by some of the participants and it is interesting to note that some of the student paramedics have been tutors in other areas. Fred had been an assessor for trauma medicine in the military and discussed the issue of moving from tutor to student within the team. He identified that he used to find it difficult because "I've been in the situation of

being in the simulation then having to go back to a colleague, not in a sense pull them to pieces ... and you think ... I'm being constructive but am I being disruptive"? Fred identified that having been a tutor and then having to undertake the role of a student among his peers was difficult, as being a tutor and being a student requires different skills and knowledge. Emily indicated that she would like to be a tutor "one day" and when asked what skills were needed to become one, she stated that tutors were required to "build people up, not something you learn during the [paramedic] course". When pressed further on why she could not just finish the paramedic course and then become a tutor, Emily noted "I just don't have the knowledge, I've got to get a few years under my belt first".

### **5.3.6 Students becoming tutors**

When I suggested to the tutors that perhaps they could swap roles for a simulation event and let the student paramedic evaluate them, the consensus was that the student would not be able to play the tutor role. The person doing the evaluation "need[s] to be a tutor" as Yale argued. Zara felt that because she had "done the tutor development programme" she was best suited to evaluating the simulation rather than taking part but was not able to articulate why. Crisp and Maidment (2009) identified the discomfort of registered health practitioners (social workers) adopting the student role. The practitioners felt that they were already socialised in the role and therefore, did not need to adopt the student persona. Belbin (1993) suggested that to stay in fixed roles could prevent the organisation growing and there appeared to be little desire among either group to play the other members roles. Perhaps this is due to the perceived status of both or perhaps just because "that's the way things have been for as long as I can remember" in the words of Yale (who had been an ambulance educator for many years). The tutors saw themselves as apart from the students; Yolande felt that "we have to keep separate, how else can we do things like sack [the student] if they fail"? However, the students appeared to regard tutors in some way as part of the student team, Emily noted "we're all in it together" and when I asked who she was referring to, she stated "[the tutors], us, all of us".

### **5.3.7 A demanding trial**

Andy noted, "we have to go through this to get to be a paramedic"; later adding "it shows we can handle the pressure of being out there. It's like going through this stress shows we can handle the stress out there". John insisted that "you've got to have this nervousness about you [during simulation] ... you need that nervous tension to help you because you know you've got to be good"

and what became clear is that some students regarded the simulation experience as a rite of passage. It was regarded as a demanding trial to be endured to allow the person going through the ordeal to emerge a better person and a better paramedic. Bryony stated “you still need to go through the process of [simulation] to actually know where your shortcomings are” and Claudia suggested “you do have to practice it, you can’t just be thrown out there and expect to do it, we do need to do this”. The Nietzschean axiom that what does not kill us makes us stronger may be appropriate here. A rite of passage is a boundary marker between one status and another, such as the Jewish faith Bar Mitzvah that marks the boundary between childhood and adulthood or the first sexual experience that allows a person to transition to perceived adulthood. Even the undertaking of doctoral studies may be regarded as a rite of passage for novice academics. However, simulation may have some differences in that a rite of passage tends to be just that, *a* rite of passage whereas the simulation event appears to be a series of rites of passage.

### **5.3.8 A rite of passage**

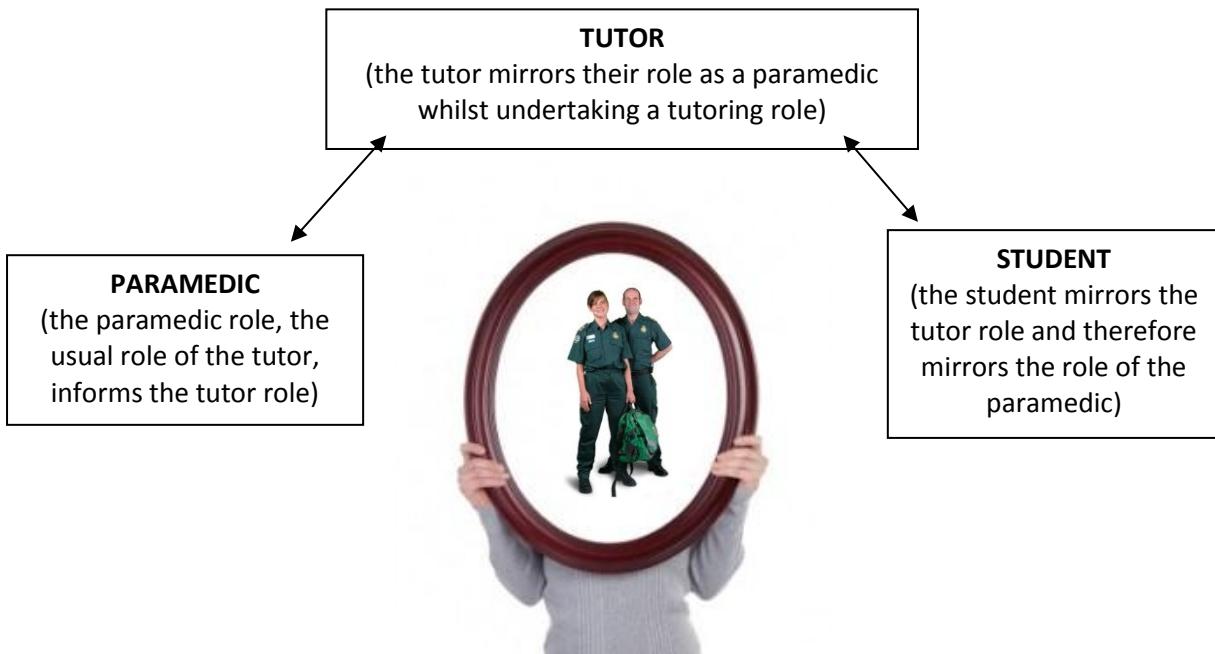
It has been suggested there are three stages to a rite of passage; these are the rite of separation, the rite of transition and the rite of incorporation (White, 1989). The use of a uniform and new concepts, language and physical environments allow the student paramedic the rite of separation away from their previous employment and into the ambulance culture. We expect the student to cut the associations with their previous culture as soon as possible. Students may join the emergency area from other parts of the ambulance service and may wear a uniform that is identical in fit and markings but a different colour (some non emergency service personnel wear a blue uniform as opposed to the dark green uniform found in emergency care). It is expected that the student will change to the culture’s green uniform as soon as possible. Natalie argued that “I really felt like a paramedic when I put my green [uniform] on for the first time” and Michael noted that “it was when I put [my uniform] on, when I first felt like a real paramedic, well...a student [paramedic]”. The student paramedic’s time in the education centre may be regarded as the rite of transition, where the student is cut off from the world to experience a total severing of the previous existence, an actual or metaphorical mental and physical weakening. The student is neither non-paramedic nor paramedic; they inhabit the role of student paramedic. They must accept direction from others, the tutors generally, without complaint or question. Larry noted, “you have to do what [the tutors] tell you to, don’t you”?

However, the rite of incorporation can surely only begin when the student goes on road as ambulance services want the students to become incorporated into the operational culture not the education culture. This was articulated by David who suggested that student paramedics “with being new to the job, simulations are good because they hone you in onto what the training’s all about, how to tie it all together”. The tutors also identified this; Will suggested “we’re here to get [the students] ready to go on road, not to be stuck [in the education centre]”. However, it is interesting to note that students generally do not do any operational shifts whilst they are in the education centre regardless of how far though their development they are. This may be to clearly delineate which rite of passage they are in or may be just that ambulance educators have not considered this as necessary; David argued, “I want to get on the road and actually do it for real and then I’ll learn what I’m doing”.

### **5.3.9 Mirroring of the roles**

In my own observations and reflections the team roles took on a more complex relationship than just student paramedic and tutor and there is a possibility that the student reacts differently in different team situations. The student may perform differently for one tutor than they would in an identical simulation outline with a different tutor. Certainly the tutors I observed, although sharing some similarities, also had very different methods of giving feedback. In my field journal I noted “[Ian’s tutor] was almost apologetic when telling Ian what he had missed, she held her head to one side as if she was breaking bad news to a bereaved relative”. All tutors are also operational paramedics, so there is no suggestion that the role of paramedic that the tutor inhabits when not in the education centre becomes invisible. The tutor role may mirror the role of the operational paramedic as in the example given above. This is borne out by literature; an overview of this issue explored by Tiberius, Sinai and Flack (2002) suggested that the role modelling of the student to become an extension of the tutor was an aim of medical education. The aim is for this mirroring of the tutor as a paramedic to occur and therefore the mirroring of the student as a tutor (and by definition, of the student as a paramedic) as seen in figure 5.2.

*Figure 5.2 – Mirroring of simulation roles.*



Bernroider and Panksepp (2011) explored the neurobiological aspects of mirroring roles and suggested that we mirror unconsciously to make us feel comfortable in situations and actively seek out these roles to mirror.

### **5.3.10 Empathising with the patient**

This mirroring of the student as tutor and onwards of the student as paramedic may be seen in other instances. Frank felt that “you have to feel something for the patients” echoed by Zach who noted that “[students have] got to show some feeling with [the patients]”. Hochschild (1983) used the exploration of flight attendant training and the roles these staff play in airplane journeys to discuss themes that are relevant to the ambulance setting and particularly the ambulance education environment. The pressure to ensure that the student empathises with the patient and some of their abhorrent behaviours, which may due to pain, embarrassment, alcohol, drugs, communication issues or any combination of these, allows the paramedic to be emotionally invested in a patient they may not have any empathy for. Of course as a public service, there is an expectation that staff will handle such patients with calmness and professionalism but it is still remarkable to watch a student or paramedic dealing with behaviours that most would consider anti-social at best. However, there is some risk to using this empathy strategy, as this does not allow for easy depersonalisation when the patient is abusive or when the patient does not reciprocate the feelings

of empathy and caring. Therefore, there is a possibility in the simulation event that the student paramedic gives far more in the performance than the simulated patient or tutor. This may cause imbalance in the relationships and exploit what Hochschild called ‘emotional labo[u]r’. This can be ultimately damaging to the student as they give far more of themselves in terms of empathy than they receive and this may cause the student to view this unbalanced relationship as the norm when they become operational. This continued unbalanced feeling becomes second nature and may lead to a possible exhaustion of care, commonly called ‘burn out’.

## 5.4 ROLE

*Sometimes you feel a bit silly because you're going through different roles. Sometimes at a normal job you do different pieces, different bits and bobs. If you do the same things in the classroom you might look a bit silly but on a real job you're doing a good job. It's a bit like being the best dancer in the world isn't it, but if your mum and dad ask you to do it in front of your auntie and uncle or your cousins, you feel like a bit of an idiot in the living room?*

(Larry)

The concept of role (or front) is central to this chapter that explores simulation as performance, front being the part of a person’s performance that defines the situation for the person observing. In other words, it is the set actions or behaviours that a student shows to those watching, whether those watching are tutors, other students or even the simulated patient. It became apparent during the data collection for this study that many student paramedics put on a front and not merely an obvious appearance front. I would suggest that this is not only in the simulation setting but also whilst on road that a role is constructed for the observer and this is a phenomenon I have observed consistently since it was detected in the data. Ambulance staff and I include myself in this group, change in different situations with different people and this section of the chapter gives data to highlight this. This notion of front can be clearly seen in the context of (to again use dramaturgical language) the idea of role, front and role having the same meaning for the purposes of this study.

### 5.4.1 Formal rehearsal

Bryony noted that “we don’t get to build up to [simulation], you just sort of do it” and the tutors recognised this also. Will accepted that “we haven’t got the time for [the student] to build up slowly, we’ve only got a limited time and we just sort of get on with it”. This indicates that the students do not have significant formal preparation prior to the simulation experience and on first appearance it looks as if students go straight into the performance. As explored in chapter four, there is limited

formal rehearsal time and limited formal structure and I had not considered this before I analysed the data. My field journal did not note this lack of preparation and I just accepted this as part of the student paramedic simulation experience. In all of the simulations I observed and in my own experience as both student and tutor, no overt or obvious rehearsal seems to take place. Students are told they are to take part in a simulation and there is an expectation that they will learn by doing the scenario, without any structured time in the programme to develop prior to evaluated simulations. That is evaluated, rather than formally assessed, as will be discussed in the next chapter. When I asked the tutor discussion group if they felt that rehearsal (using my definition of the word) would be beneficial, the response was muted; raised shoulders and eyebrows and non-committal answers. However, it could be argued that the simulation event in itself is a formal rehearsal for the next simulation event but appears to be a full dress rehearsal from the first scenario onwards. This would contradict commonly used performance strategies where the actor learns their role little by little, building to the dress rehearsal immediately prior to the performance.

#### **5.4.2 Visualisation as rehearsal**

There may be a rehearsal that takes place prior to the simulation event in a less overt way. Ethan mentioned that “you try and go through it in your head, you give yourself a complaint in your head that you need to deal with, you try and run through the management [of the patient]” and Fred suggested that this visualisation even occurs immediately prior to the simulation experience itself, that “you’re running over and over in your head before you go in [to the scenario]”. Therefore, the rehearsal may not have to have a physical environment as the student runs through simulations in their head, visualising themselves in example scenarios where the simulation is of the student’s invention. When this concept was put to the student paramedic discussion group, Andy admitted that “in the run through [in my head] everything goes right” although Charles was concerned that “I control the scenario in my head, how do we know if we’re getting it right”? Perhaps the visualising of the ideal simulation event helps the student to tie the visual images they see to learning the concepts required. Pandey and Zimitat (2007) found that medical students felt that visualisation, the rehearsal to the simulation, helped them to learn; although there appears to be no clear answer why this may be so. However, it is interesting to note that Garg, Norman and Sperotable (2001) suggested that only a few key images from visualisation helped the learning process rather than a whole episode of care. One of the more frustrating aspects of this concept is that neither students nor tutors were able to articulate why visualisation helped them but understood that it was a usual part of the simulation process; Emily suggested that “it just helps”! Therefore, although there may

not be rehearsal in the clearly visible way that may be considered as such by the student or tutor, rehearsal may still be taking place in the form of visualising scenarios prior to the event.

#### 5.4.3 Physical position

During all of the simulations I observed and as shown in the pictures below and at the beginning of this thesis, the simulated patient sat in a chair in the middle of a classroom. The tutor sat to one side of the room on a chair behind a desk and I sat as close to the wall as I could behind the student paramedic, so that I would not be in the student paramedic eye line but could observe all that took place. When the student walked into the simulation setting they introduced themselves to the patient who was sitting facing the student entry point approached and when no more than about two or three feet from the simulated patient, knelt on the floor in front of the simulated patient; as shown in figure 5.3.

*Figure 5.3 – Student paramedic position during simulation.*



All of the student paramedics carried out the entire scenario at that level kneeling on one or both knees not once standing up or moving to a chair. Chairs were always to hand in the simulation area but none of the students picked up a chair and moved it to sit near the patient. The students may not even have been aware of this physical position, Alan discussed the simulation I observed and stated that during the simulation: "I'm sitting [my emphasis] quite happily talking, I'll yammer away, you know". Of course this may have been merely a figure of speech but at no time did Alan sit either on a chair or on the floor during the scenario, he knelt throughout. David even mentally placed the

patient as supine, “there’s someone *on the floor* [my emphasis] there’s no one else around just me and my crew mate” when the simulated patient was sitting in a chair in the middle of the room. Initially, I thought this kneeling position was to get to the eye level of the patient and this is sometimes communicated to the student during initial training, the need to avoid standing over or above a patient but all of the students always knelt *below* the level of the patient during the scenarios I observed. However, David may have felt this performance required a hitting of the mark, so regardless of where the simulated patient was physically situated, the script for some simulations require a supine patient. Mannequins cannot be made to sit on chairs (without great difficulty) so perhaps the placing of the patient as supine echoes a different performance. Certainly there are only two patient positions I have seen in many years of simulation learning, the simulated patient is either sitting on a chair in the case of a human simulated patient or on the floor for a mannequin simulated patient. Having static performances does not make the event any less of a performance; however, there is nothing in the data to suggest that poor proprioception or even spatial reasoning is behind the differing physical levels.

#### **5.4.4 Eye contact**

As mentioned, there is some guidance given during student paramedic initial development that standing above the eye level of a patient may appear intimidating and there is some truth to this, it can be quite daunting to have someone stand on a physically higher level looking and talking downwards. This is echoed in ambulance service guidance on communicating with patients, this from an ambulance policy stating how and when to wear sunglasses when with the public.

Suitable sunglasses can be worn when appropriate. It is important that employees consider removing them when dealing directly with patients, members of the public or cultural groups as they can present an authoritative or aggressive image and act as a barrier to eye contact and thus inhibit effective communication.

(East of England Ambulance Service NHS Trust, 2010)

Oculesics has been explored since the 1960s and there is some suggestion that eye contact can be used to exert social control over someone (Kleinke, 1986). However, there is evidence that we have a social preference for people that maintain eye contact as this directly stimulates the social brain (Senjin and Johnson, 2009). Therefore, this move to maintain eye contact with the simulated patients may have an inherent advantage.

#### **5.4.5 Physical hierarchy**

When asked why he knelt and then sat on the floor during the simulation, Michael had not considered his position to be an issue, “I don’t know why [I didn’t get a chair to sit on], I suppose they weren’t there but if [the tutor] had offered a seat, I would have sat down on it”. However, as well as helping to maintain eye contact, the position of the student below that of the tutor and simulated patient may have an alternate meaning. There is a possibility that kneeling may be a show of submission as part of the paramedic role and makes this service industry almost a servile industry. Consider Alan’s use of oppressive language when talking about the simulation I observed, “in [the] scenario you kind of feel the weight of all the people around you on your shoulders keeping you down”.

There is some evidence that the concept of postural complementarity showed here; that because the student paramedic does not mimic the physical position of the simulated patient or indeed of the tutor, it maintains the hierarchy of the social situation (Tiedens and Fragale, 2003). The physical hierarchy is clear to see in all of the observed simulations. However, the subtle issues beyond merely the physical may be harder to ascertain. The students had an overwhelming respect for the patient “that’s why we’re here, I just wanted to help people” as Bryony stated but this respect may be mirrored by the patient. Incidents where ambulance crews are attacked or held to be below the standards required are newsworthy because these issues are so rare. Of course, kneeling and sitting on the floor may just have been the most comfortable position for all of the participants but seems unlikely that not even one student would use a chair and reflecting on my long experience of being involved with simulation learning, I have never seen a student sit on a chair, either during the simulation itself or when receiving feedback. The more I observed, the more the student position seemed to show physical submission to the simulated patient and this was echoed during student position whilst tutor feedback was given. All of the students either remained kneeling or sat on the floor, even lower than the kneeling position; the student position seen during tutor feedback is shown in figure 5.4.

*Figure 5.4 – Student position after simulation.*



This concept of student and tutor relationship and the role of hierarchies are explored further in chapter seven of this study.

#### **5.4.6 Ambulance uniform**

The personal front is not merely posture or position, as discussed already in this section of the chapter, but may also include the costume of clothing and insignia; a vital part of the student paramedic role. Ambulance services generally have policies or procedures for wearing issued uniform and identify the relationship between clothing appearance and image.

The public and professional image of the Trust stems directly from the appearance, bearing and conduct of its employees. It is essential therefore, that every member of the service is smartly presented at all times especially when in the presence of the general public and representatives of other emergency services and public bodies.

(East of England Ambulance Service NHS Trust, 2010)

It is interesting to note that ambulance uniform, although gravely functional, maintains suggestion of costume. The gold lettering and crest embroidered into the shirt provides a dashing touch of colour to the dark green suit, as the stock NHS ambulance staff picture showing typical uniform in figure 5.5 identifies.

*Figure 5.5 – Typical ambulance uniform.*



#### **5.4.7 Reasons for use**

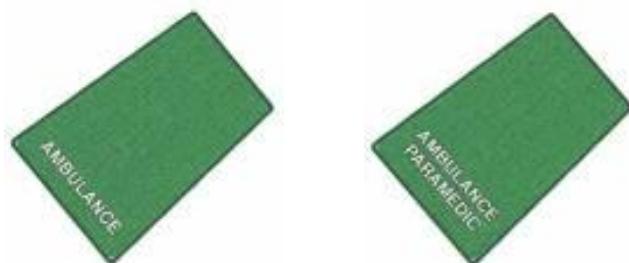
The student paramedic tends to wear uniform for the duration of the course and there is some disagreement in ambulance services as to why this may be. There is the remote possibility of a major incident occurring that would require the immediate presence of all staff, whether qualified or not, and some managers have stated this to me as a reason that student paramedics should wear uniform. This is demonstrably ludicrous as there are so few incidents that require student attendance. Although having observed students carrying out simulation in undoubtedly inappropriate clothing (hipster skinny jeans showing a large proportion of a hairy natal cleft and favourite trousers being ruined by kneeling on high-wear ambulance carpets) wearing uniform is perhaps the easiest option. Wayne, a tutor, felt that wearing the uniform made the students look “smart”. There is the possibility that wearing a uniform makes the student physically more comfortable during the simulation experience but I would suggest that uniform adds to the front the student puts on, that of a paramedic. Zara suggested that uniform made the students “feel like ... a paramedic” and Michael noted, “I feel like a paramedic when I have [my uniform] on”. The tutors may reinforce this, Zach observed, “we like [the students] to wear uniform, they look the part”.

When exploring this issue further, Natalie argued that “I just don’t feel the same doing [simulation] in jeans, I do better when I wear uniform”. It may allow the student to inhabit the front of the paramedic, although clearly they have neither the skills nor experience to perform that role. The uniform may make the student feel comfortable acting as a paramedic by wearing the paramedic costume and performing the paramedic role. Larry highlighted that in simulations “having the uniform, you’d probably do it second nature, like a paramedic” and this may reinforce the intertwined roles of paramedic and student paramedic. That if even the uniforms are identical, then perhaps the fronts are too. This may be related to the physical positions as discussed earlier and generally a paramedic will kneel in front of a patient when evaluating a patient, so the kneeling of the student paramedic may mirror the role of the paramedic. Therefore, this physical mirroring merely adds to the overall mirroring of the role of paramedic by the student paramedic. Sparrow (1991) explored this aspect of nursing uniform and investigated the concept of uniform allowing access to a patient and suggested that uniform allowed the wearer confidence to approach a patient. However, there is some argument that uniform merely perpetuates the organisational or professional tribalism. That by having all student paramedics and tutors in the same uniform, their allegiances will be to the ambulance service primarily rather than to the patient or each other (Timmons and East, 2011).

#### **5.4.8 Public perception**

However, there is the consideration that uniform is a front that may be the most comfortable for the public. Patients understand what the green uniform means to them which is generally a paramedic response providing treatment and transport (Snooks et al., 1998). The scant literature that does exist on issues surrounding uniform tends to be from a nursing origin, although some of the same themes have been identified and there is a tendency of the public to assume competence from someone in a medical uniform, regardless of actual clinical position (Sparrow, 1991). It is interesting to note that there are no obvious differences in the uniforms of paramedics and student paramedics, they are the same colour with the same markings. The only difference is the wording on epaulettes, a subtle difference and not obviously visible to the patient, as can be seen in figure 5.6.

*Figure 5.6 – Typical student paramedic epaulette and paramedic epaulette.*



#### **5.4.9 Equipment**

Ambulance education centres use pre-kitted bags containing all of the medical items that a student may need, echoing kit that is used operationally. So a typical kit bag, as seen in figure 5.7, may contain items such as blood pressure measuring equipment, cannulation kit, blood sugar measuring items, therapeutic drugs, dressings and stethoscope.

*Figure 5.7 – Typical ambulance equipment bag.*



#### **5.4.10 Stethoscope as prop**

Paramedic social front whilst using props was clearly observed during the simulations; this is the tendency to claim facts that can be asserted by other routines. This was perhaps most obviously seen in Alan, Fred, Ian and Larry wearing stethoscopes around their neck in the manner of a physician. This may be to allow the student paramedics the claim of the medical (clinical) manner of

a doctor. Physicians have a front that most people would recognise, that of the white coat and stethoscope and with the move to eradicate the pathogenic white coat, only the stethoscope may identify physicians in a hospital setting. The stethoscope is used to listen to the chest and heart sounds of a patient and is typically found in the equipment bags found on ambulance vehicles and education centres. However, Alan, Fred, Ian and Larry have to have made a conscious decision to take the stethoscope out of the kit bag and place it around their neck. They were not directed to wear the stethoscope this way, nor did I see any tutors wear a stethoscope this way. Most of the students who put the stethoscope around their neck indicated that this was anything other than for ease of access “just so I can check the chest quicker” stated Ian. However, it is clearly no time saver to take the stethoscope from around the neck than to take it out of a pocket or bag and stethoscopes are notorious harbingers of pathogens that may allow for commonly transmissible microorganisms to be passed between people. The students I observed had no other equipment anywhere else on their person or in their pockets, preferring to keep the items in the kit bag. Therefore, there must be a possibility that by putting the stethoscope around their neck the student paramedic wears the social front of a doctor. This is common practice in the centres and I now observe this almost on a daily basis among students. Yale advised that “[the student paramedics] like to wear the stethoscope ... to look like a real paramedic”. However, in my experience, operational paramedics rarely put the stethoscope around their neck but when they do, it is invariably during significant accidents or illness. There may be two strands to this seemingly innocuous act, the student may be role-playing the physician front and/or role-playing the paramedic front seen only during high excitement, high drama times.

However, there is a possibility that the student paramedics wore the stethoscope as this may reflect a persona seen in the media. The media, especially the visual mediums, has had a relationship with medicine for many years with Snow (1967) mentioning the television programme Dr Finlay's Casebook and its link to the public's perception of physicians. When prompted further, one of the student paramedics also identified this relationship and felt “maybe we just do what we see on TV”. Gordon noted, “[wearing a stethoscope] makes me feel like a security blanket, like I feel like a paramedic”. When questioned on a possible physician identity or role, he stated that “yeah, possibly I like the way it makes me feel [to wear the stethoscope around the neck]; it looks like a doctor doesn't it”?

#### **5.4.11 Media portrayal**

When discussing the media portrayal of paramedic and relationship to the role, some consideration must be given to the paramedic role in both fictional and reality representations. The role of the paramedic allows for dramatisation, there is a perception that it is an exciting job and medical programmes are well liked. Shows such as Casualty, Holby City, Emergency Bikers, Emergency with Angela Griffin and London Ambulance prove popular and enduring. The amount of currently airing medical shows is considerable compared to television shows about other occupations. The only comparable amount may be for police shows, a profession that share many similarities in terms of role and public perception. Zach, a tutor, observed that “[the students] watch all the shows; the Casualties and they think they are a paramedic”. Natalie highlighted that “watching things like [medical shows], I knew that wasn’t how it would be but it is just so totally not like that”. In suggesting this concept of media images of paramedics influencing their behaviour to the student discussion group, a spirited debate took place on the nature of these types of portrayals. Perhaps Dan identified this best when he stated “[we] feel we should behave like Josh [a character in a fictional paramedic programme] … because that’s what the public wants”. Josh was a fictional paramedic in the medical television show Casualty; he actively saved lives on a weekly basis and often put himself in physical danger to do so. A flawed hero, he never put his own failings or personal issues before that of dashing to the scene to do major but unrealistic interventions (open heart surgery at the side of the road with a biro and a penknife).

I am sure that if I was not an operational paramedic, I would also believe that this is how staff in the ambulance service worked (at least some of the time), as this life looks exciting and rewarding. This may account for the student perception of their roles and therefore part of their discomfort in some situations, such as simulation. Therefore, as Dan noted above, the student may be merely showing what they believe to be the social and personal front of a paramedic seen in the media rather than creating a new front for this existing and highly visible role. If the theory of self as being constructed from social observations, discourses and representations (the so-called essentialist view) is accepted, then the images that abound in the media must play a part in constructing the student paramedic.

#### **5.4.12 Previous exploration of themes**

This link between paramedicine and existing media roles has been explored. Tangherlini (1998) talked to paramedics about their experiences whilst operational. He noted the relationship between ambulance stories and film metaphor, specifically the use of words and phrases in the stories that paramedics told him. Tangherlini noted that paramedic stories contained performance metaphors and gave examples such as paramedics describing an emergency call environment as a ‘scene’. He also mentioned that a paramedic stated that some emergency calls were ‘like something from a horror story’ (Tangherlini, 1998, p. 215). Tangherlini observed that in many stories, paramedics used film scenes as a comparator to situations they had observed; he postulated that this was because it made harrowing emergency calls less real and therefore easier to manage mentally. Although there were some interesting ideas generated in this text and for the first time it allowed paramedics a voice in the wider ethnographic community, this study discussed the nature of emergency *work* as performance, not the education or development of staff as performance. Therefore, my thesis is unique in its exploration of these themes.

#### **5.4.13 Alteration of perception**

There has been a suggestion that student paramedics move their perception of paramedicine when joining the organisation. O’Meara, Tourle, Madigan and Lighton, (2011, p. 8) suggested that in students there is a “definite shift from a reliance on media images of paramedics and a more mature analysis”. As highlighted by data from the students and tutors shown in this section of the study, there is a suggestion that the student paramedic rather than defining the role merely acts the role that exists using the props of uniform and social front seen elsewhere. The student adopts the role of either doctor or paramedic by wearing a stethoscope around their neck; this persona is seen in media portrayals and the student merely adopts that front. This could be also true of the physical position the student paramedic adopts when approaching the simulated patient, the student kneels in front of the patient because that is what the paramedic would do. So by adopting these fronts, the student adopts the front of the paramedic or physician. Defining the role would mean a complete rejection or even unawareness of previous incarnations of a role. The role cannot be defined when there already exists a well-used character visible in media and peer arenas; however, the role could be *redefined*. Searle (2003) made a compelling case for the theory of construction of self and role from medical media images; that to have a defined role already in place means that redefinition may not be possible. The images already exist and therefore the social norms are

already in existence. Related to Baruch's (2006) work on teachers using roles in the classroom, a relationship can be seen between the established metaphorical masks worn by teachers and the established role-identifying masks worn by student paramedics. In considering the roles adopted by the student paramedic, some exploration of the usual work place of the student and paramedic (the setting) is necessary.

## 5.5 SETTING

*The environment is a fake situation so it's actually quite difficult to draw in from your surroundings and act with that.*

(*Claudia*)

This part of the chapter discusses the concept of settings in the student paramedic simulation process. The setting is the area in which someone works or lives and when talking about settings in this chapter, it must be assumed that the setting is the education centre for the student paramedic. Setting is very important in the ambulance world and for most paramedics, there are three usual settings:

- i. Where the patient becomes ill or injured (usually a patient's house or in a public place),
- ii. The ambulance,
- iii. The hospital that the patient is transported to.

These three environments are changing and although people's houses differ, most houses have similar layouts; the lounge will include sitting area, table, television etc. The same is true of ambulances and these may have some slight differences but have a common layout and common equipment. Although ambulance staff will not usually work on the same vehicle every shift, there is some commonality in most vehicle interiors. Settings only move with the performers in exceptional circumstances, such as in ambulance work. In most other medical settings, the environment remains static, in that staff come to the setting to see and treat the patient. Regardless of the type of patient all will be seen in the same environment, which is usually a treatment area or room. In reality this is usually a hospital department or minor injury or general practice environment. However, in ambulance work the treatment moves to the setting of the patient but the student paramedic does not have access to these usual settings whilst performing simulations; usual here meaning the settings of a real ambulance, a real patient's house and a real hospital.

### **5.5.1 Reality of the simulation**

As already outlined in chapter four, the settings of the simulation have been described in detail and many students articulated the concept of a false environment in simulations. The scenario setting is different from real life, and not just in terms of physical environment. Andy noted, “[the simulation] doesn’t happen where it should, on the road when you’re actually dealing with the patient”; and Ethan was clear that “[it’s] just the environment because you know, on the road it just flows”. Fred suggested, “it’s not the same as when you’re walking into a house and you’ve got the surroundings, you’re looking for the surroundings”. David even seemed to suggest that having real and possibly physically difficult surroundings makes the situation easier to handle:

If you are in the middle of a field, they are sick, it’s not only your training what kicks in, it’s the extra bits. It’s the ‘right how can we get the person back to the vehicle, is there anybody else around, what is the area like, do I need to get something to come in to get the patient?’ In a classroom you’ve got to try and imagine that and half the time, although I’m getting better with the patient itself, it’s the surroundings around the patient, you just know you’re outside at night.

What David articulated was that emergency work takes place at all hours and in all locations, something not reflected in the typical simulation experience. The setting in simulation, similar to most other medical specialities, is static and the patient (in this case simulated) comes to the student. Therefore, the student paramedics highlighted that the simulation setting is completely different to the settings that they are likely to encounter when operational and not one of the three most likely settings are used or simulated. However, it seems to be agreed on by ambulance texts and ambulance tutors alike is that any simulation needs to be as close to real life as possible. This is suggested in much of the evidence (Hotchkiss, Biddle and Fallacaro, 2002; Jeffries, 2005; Fritz, Gray and Flanagan, 2008) and this may be the fundamental flaw in any paramedic simulation. In the notoriously difficult working area of out-of-hospital care, especially work carried out in a cramped and moving vehicle, a simulation may be impossible to carry out safely. An additional consideration is that mannequins, however high fidelity, still look like mannequins; they are plastic and unmoving and patently not real. Taking a pulse on a plastic dummy is not like taking a pulse on a warm, moving human being and talking to a mannequin can prove understandably difficult. Even role-play simulation has very little reality and generally the simulated patient is a fellow student (in uniform) acting the part of a patient from a different age group and even different gender. However, it is worth noting that Dieckmann, Gaba and Rall (2007) stated that it is not always important to have the physical realism to attain an educational goal, in this case the goal being to achieve competency in the desired aspects of responding quickly and efficiently.

### **5.5.2 Reality of the setting**

As highlighted, the settings encountered by the student paramedic during the simulation event are very different from the settings the student is expected to work in whilst operational. The tutors identified this as a possible issue and during the discussion group, carried out a spirited talk about making the physical settings more appropriate during simulation. Wayne suggested having areas in the centre set out to look similar to usual settings. He suggested that perhaps it was possible to have the shell of an ambulance available to allow the students to carry out simulations. When asked why this might help, Zara suggested that to make the setting “more real” (her words) would mean the student paramedic would “learn better”. However, the reason that usual settings are not used for simulation may be for perfectly reasonable organisational motives. It is certainly easier to have students attend a structured classroom environment rather than have a tutor visit each student individually whilst on road. Wayne noted, “we can’t go and see how they work individually; how would that work, that would take years”? Unfortunately, there appears to be scant literature regarding the physical setting and its context or validity in the simulation event. Why a setting may or may not be important in simulation is not explored fully in current evidence beyond the request of the participant to undertake simulation in a real setting. However, it is clear in data collected for this study that both students and tutors felt that the simulation event would benefit from a setting that mirrored the usual work place settings (or at least more than they do currently).

### **5.5.3 Back stage**

Michael identified that “I feel different when I’m waiting to go in [to the simulation], I can be myself but have to go into the whole paramedic thing when I’m called”. The difference in student experience of the front and back stage area in the student paramedic environment is observable. The front stage may be considered the simulation area and the back stage is the physical or even psychological space that is not the direct simulation area; this could be an anteroom, corridor or even part of the simulation room itself. The back stage area may be related to the ambulance when a patient is not present; it is an environment where staff can change their front with their crewmate. Wäger (2007) explored the service industries and identified that back stage learning had a noted influence in front stage behaviour. He suggested that this learning was not constructive, as it has limited effect on the delivery of a service. The argument being that to be constructive, learning had to have a tangible effect on the service (in this case the treatment of a patient). However, this appears to be untrue of the student paramedic’s back stage learning, as some students felt that back

stage discussion improved their performance. When I suggested that this time before the simulation should be removed from the entire event, some students and even some tutors were strong in their defence. Dan argued that this back stage aspect was “part of the whole thing” and Frank believed that this back stage preparation “was when you get your head around what’s going to happen”. Wayne believed that to take the back stage aspect from the simulation event would be “unfair, [the students] probably learn more when they’re chatting than in the scenario”.

#### **5.5.4 Being apart from the setting**

Helen suggested “when I’m there, it feels as if I’m not there; does that make sense? I feel like I’m watching myself go through [the scenario]” and there appears to be some tendency among the student paramedics to feel separated or distant from the simulation event. Dissociation is the term given to the tendency to remove oneself from the state of being in the moment. It is common in most humans; the ability to daydream and ‘drift off’ during moments of stress can help to maintain psychological balance. There are clearly times where removing oneself cognitively from a situation is helpful to cope with feelings and issues associated with a psychologically stressful event. When talking to some students there was a tendency for them to view the simulation experience from a psychologically distant vantage point. Claudia noted during simulations that “something just does take over” and “you go into a zone” and Bryony stated that simulation learning is “just such a bubble”. Some students used language that suggested being remote from the simulation, which may be beneficial if they feel a simulation is anxiety provoking and it is becoming clear in this study that most students do.

#### **5.5.5 Keeping score**

During all of the simulations I observed, all of the tutors sat on chairs at tables with paper in front of them on which to make notes during the simulation; rather than using a clipboard or standing up. The tutors all made notes on a piece of paper in front of them and an example of the simulation sheet completed by tutors is shown in appendix F. Emily stated “I hate it when you walk in and [the tutor] is sitting there like a teacher, ready to give you a bollocking”. However, when I suggested that perhaps not having a tutor sitting behind a desk may help remove this feeling, Frank noted that “[the tutor] is still going to rip you apart whether they’re sitting at a desk or not”. Although Andy stated that he felt “someone making notes” was the issue of concern for him and Ethan identified he felt uncomfortable:

... when you get someone sitting there marking you with a pen and paper taking notes; you can start worrying about 'have I covered everything, have I missed anything'?" You've got someone making notes and I think it's just when you see that pen scribbling, they're making either good points or bad points and then you start thinking 'oh yeah I forgot to do something' ... and it doesn't matter who it is, it could be anyone sat there.

It is clear that there appeared to be some relationship between the writing of evaluation points and the discomfort felt, this idea that someone was making a permanent record of simulation events. I asked the students if they would be more comfortable without notes being written by tutors and Dan, Emily and Frank answered with a resounding "yes". When pushed further to explain why this might be the case, Emily stated that "it's there, you can't change it; when you've done badly it's there". However, the students may have an overinflated sense of the value of these notes even though they may have a certain permanency. The notes (which the student is given a copy of) do go in a student file but that file invariably collects dust in an archiving warehouse. Yale, a tutor, articulated this best and did not understand "why [students] have a thing about [tutors making notes], no one ever sees them". This is true and on review of typical comments on feedback forms, they seem fairly innocuous. Functional, almost sterile, non-critical comments on items that were done and not done: pulse taken, respiratory rate taken, no blood pressure. Therefore, the fear over the 'marked' simulation seemed completely illogical. Both tutor and student knew that the simulations I observed had no impact at all on the continued progression of the student paramedic but still fear pervaded the situation. It was almost as if, to not fear simulation would be to not fear the system, a theme explored in chapter seven of this study.

## 5.6 SUMMARY OF THE CHAPTER

In conclusion, simulation learning and performing certainly seem to have many parallels and it is clear that many of the participants in this study felt that the simulation experience is a performance and that they are actors playing a part. The use of performance language such as acting, drama and script appears throughout the data but comparisons to performance can be identified even beyond such obvious language. The student must wait their turn for a simulation in a backstage area and come into a separate room or take centre stage where they are on show with their props (equipment), in costume (uniform), using a fairly standard script and the audience is the tutor watching the simulation giving their cheers or boos in the form of verbal feedback.

Concepts from dramaturgical sociology run throughout this chapter and to some extent, the whole

of this thesis and the idea that all human interaction can be observed for meaning is one that informs this research. The position of this chapter, that life and all behaviours and actions are part of some complex performance, is important to help understand the student paramedic and even the tutor to some extent. In the context of simulation learning, they feel to a large extent, identified by their role rather than just their actions. The student's self is influenced by the performance because that is what makes the student who they are. The self cannot be viewed without the social interactions in which the student's identity changes and adapts according to the situation, the requirements, the need to reflect or deflect.

This chapter began with the proposition that ambulance education is irrevocably linked to a dramaturgical model and various themes have been explored in this chapter to substantiate this position. Performing the role of both student and paramedic gives the ambulance student dual responsibility within the organisation and clearly there are performance-based metaphors found in the collected data. However, it must be cautioned that perception does not make a theory more valid (or less valid for that matter) but dramaturgical theory, which suggests that identity is fluid and adaptable, can be applied in this study. It is clear that the student paramedic sees the process of simulation as partly a test of knowledge and partly a test of acting ability and it is the performance aspect of being able to 'pass themselves off' as a competent professional that may prove most difficult for the student. In no other published literature is this concept of student paramedic education as performance explored. The student clearly finds aspects of simulation challenging and anxiety provoking, a theme further explored in the next chapter.

## CHAPTER SIX – STUDENT EXPERIENCE OF SIMULATION

*I hate [scenarios] with an absolute vengeance.*

*(Alan)*

### **EXAMPLE SIMULATION EXPERIENCE (SICKER THAN THE PATIENT)**

*He feels sick walking towards where the patient is sitting, not knowing what he will face. Would it be someone dying, someone screaming in pain and begging for help? He is shown in to see the patient and knows the tutor is watching him. He probably has a gut instinct that the patient is seriously ill even before his machines confirm his findings. He realises very quickly that the patient is having a heart attack, this is a life-threatening illness and he knows he has to get it right (so much is depending on it).*

*He treats the patient in a seemingly calm and efficient way, giving help and making sure the patient is at ease. All the while, desperately trying to not show the patient how much his hands are shaking and how much he is sweating. He feels sicker than the person having the heart attack! The patient is deteriorating; damn it, he must have missed something.*

*Although he tries to make sure all treatments are given and the patient appears comfortable, suddenly it is all over. Now comes the worst part, the autopsy, finding out what went wrong. Finding out what went right is pointless, he wants to know how he could have saved the situation and goes over in his mind all of the things that he should have done.*

*This will play over and over in his mind. He will never forget the mistakes he made and how he has let the patient down. He wipes the sweat off his forehead and hands, lets his heart stop thumping while the equipment is cleared away. He smiles and nods and leaves the room, dejected.*

*I think it's a lot of pressure ... we've got a lot of things going on in our mind anyway. You're tired anyway and your brain is getting to the maximum it can do ... and the scenario, I think I put pressure on myself. I do not want to fail, I want to pass and I want to succeed and I want to be successful and I want to do well.*

*(Katie)*

## **6.1 INTRODUCTION**

This chapter explores how the student paramedic feels about the simulation experience, what they think about simulation learning. This is probably one of the more distinct features of this research as, for the data collection, student paramedics were asked about their experience and feelings beyond a simple Likert-type scale questionnaire. As explored in chapter two, historically most research on this subject of feelings/experience is based on quite straightforward indicators, does the student like the experience or do they dislike it and using a numerical scoring system, how much or how little do they regard simulation? This part of the thesis addresses the gap in the literature and allows students to state and then discuss how they regard simulation as part of the paramedic development pathway. This chapter sets the grounding for the assertion that simulation is stressful and explores further why this may be so.

The vignette at the beginning of this chapter relates the anxiety a patient undoubtedly feels (it is an ambulance maxim that when a patient tells you they are going to die, they generally do!) to the anxiety of a simulation. There is a blurring of the line between the fear a patient in pain or unable to breathe experiences and the student paramedic undertaking a simulation. Clearly the same physiological responses are felt and seen and occasionally it feels as if the student paramedic is suffering more than the patient. Although the anxiety of the patient has different origins, the outcome is the same; the heart beats faster, the breathing quickens, sweating occurs and nausea is felt. Why this may be the case is explored at length in this chapter and to some extent, throughout this study.

Stress and paramedicine are interlinked. Most people would assume that paramedics work in a stressful environment attending to patients in (sometimes) horrific situations and I would accept that this is true. I am an operational paramedic who has attended some extremely harrowing scenes and incidents and I am aware that for most ambulance staff, the occasional emergency call can be stressful. As discussed in the previous chapter, media portrayals of paramedicine seem to depict major incidents and life-threatening emergencies continuously throughout every shift. This is not the case and the average shift consists of periods of relative calm, driving and attending routine incidents, interspersed with intense short periods of time with undoubtedly potential stressors. Stress may have different meanings in different situations and therefore it is important to explore the nature of stress and its relationship with anxiety and simulation. The term stress has its origins in engineering and can be defined as an external threat or tension from a stressor (Noy, 2004).

Stress, or distress to use its more appropriate psychological term, can be a number of cognition states (such as anxiety) based on threats to physiological needs or physical integrity. According to Kemeny (2003), the severity of the response can be based on a number of factors:

- i. Whether the stress response can affect the outcomes of the stressor,
- ii. The level of demand,
- iii. How novel the stressor is,
- iv. The duration of the stress,
- v. The ambiguity of the situation.

These stressors can cause the fight-or-flight effect of the sympathetic adrenomedullary system, causing release of adrenaline and noradrenaline and it is this uncomfortable feeling that is vital to continued human existence. These increases in involuntary processes such as heart rate and respiratory rate, along with other symptoms such as peripheral vasoconstriction and increased blood flow to the voluntary muscles causes some of the unpleasant side effects of this response. Perhaps a more disturbing and in the long term more dangerous hormone of stress is cortisol, more often released during acute psychological stressors (such as undertaking a simulation). Continued stress causes hormonal release and potential unpleasant and relatively harmful side effects. There is some evidence to suggest that constant or repeated stress can permanently damage the hippocampus leading to memory loss (Kemeny, 2003). This takes into account the concept of threat versus challenge, threat inducing a full stress response and challenge being merely heightened sympathetic arousal to obtain a goal. The concept of challenge and the processes that govern it, although unpleasant, are vital in helping us achieve our goals. It sharpens reflexes, ensures a heightened blood flow to the brain and generally makes us perform better. As discussed, anxiety is a cognitive state that is part of the overall stress mechanisms and it is anxiety that (when related to simulation) may cause such dislike of this learning tool. Therefore, the next section of this chapter explores anxiety and student paramedic experience of simulation.

## 6.2 ANXIETY

*I think it's because for me, I'm nervous about it because in my head I'm trying to remember everything and ... it's going all gobbledegook in your head and you're trying to remember the structure and I think you get flustered and if something's thrown out different, it kind of gets you in a flap and you're trying to get yourself back together and you've got to stop, get yourself back and that's what I've been pretty much doing the whole time.*

(Katie)

Anxiety can cause a number of physiological effects that may be seen and certainly can be felt. As discussed, anxiety is a cognition state as part of the wider set of behaviours and physiological responses of (and to) stress. Apprehension, tension and worry are the feelings most associated with anxiety but in this study there is a clear line between anxiety as a by-product of simulation learning and anxiety as a set of symptoms that affect ability to function. This generalised anxiety disorder may be considered as excessive or persistent and not the immediately occurring and subsiding anxiety associated with simulation learning. This is the definition meant when referred to anxiety in this study. In all of the simulations I observed, although it was clear that students were anxious, they were all able to complete the scenario, however abhorrent the anxiety effects may have been.

### **6.2.1 Ambulance work is stressful**

Students and tutors alike accepted that ambulance work could be stressful at times. Charles, when asked if he felt paramedicine has moments of stress stated emphatically “God yes, from what I’ve seen, there are some really bad jobs, car crashes, that sort of thing with major injuries. Of course that’s stressful”. Yale, a very experienced paramedic and tutor noted, “[the job] really is full on at times, you go to some horrible [jobs], it just takes it out of you”. Certainly in ambulance work, it is generally acknowledged that paramedics suffer stress from what may be considered stressful emergency calls and this has been studied for many years (Elling, 1980; Hammer, Matthews, Lyons and Johnson, 1986; James, 1988). Okada, Ishii, Nakata and Nakayama (2005) stated, in common with virtually all paramedic stress evidence, that mental and physical stress required better training to detect and treat but did not consider stress *whilst* training. There is no doubt that emergency ambulance work is (on occasions) stressful and adrenaline response can be felt and observed. However, I believe the link between: a) the stress of paramedicine whilst operational and b) the stress of simulated paramedicine in the education setting have many factors in common. This is explored further in this section of the study. What is certain is that the simulation events I observed caused anxiety for the overwhelming majority of student paramedics talked to, as highlighted in the data.

### **6.2.2 Physiological response to stress**

“[Alan] looks ill, ashen … he has sweat rings on his shirt” I noted in my field journal and Katie identified that during simulation “my heart’s going because of my nerves”. These descriptions accurately reflect the physiological responses of acute stress. The pale skin seen in anxiety and

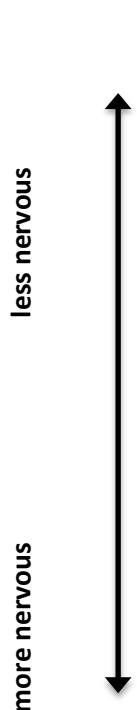
increased sweat secretion allows for the radiation of heat away from the skin in moments of potential immediate physical work. The increased cardiac contractility and rate ensures the potential rapid physical need is fed by an increase in blood pushed around the body. An increase occurs in speed of heartbeat and in the amount of blood each ventricular contraction drives into the system. I also noted that “[John] can’t keep still, twitchy, shaky” during the simulation. The increased blood flow to the limb muscles allows the legs and arms to be stronger and faster but if no exercise is taken, can cause the characteristic twitchiness or trembling of the arms and legs. This was seen most obviously by students pacing prior to the simulation and when questioned about this, Dan agreed, “it’s probably just fight-or-flight”. Dan identified his own physiological response to the simulation event, using the layterm for the response. During the adrenergic response, the gastrointestinal processes are of no use and may cause blood to be required that could be better used elsewhere. There is a peculiar voiding and maintaining pattern that means that much of the gastrointestinal tract slows whilst the parts most open to the outside world tend to void, hence the urge to be sick and visit the lavatory in moments of stress whilst feeling nauseous due to the slowing of gut motility. This was clearly articulated by some of the student paramedics, Michael stated “[doing simulations makes me] want to have a crap” and Natalie insisted that she “always feel[s] sick when I’m waiting to go in [to a simulation]”. However, symptoms of anxiety have been experienced by most of us when faced with moments of stress and these are entirely natural and necessary processes however much discomfort they cause. All of the physiological responses are to reduce peripheral blood flow and increase shunting of oxygen and nutrient-rich blood to the central organs but it is the prolonged and continuous anxiety response that is most harmful. Therefore, as well as the physiological response seen and felt, the student paramedic was also able to articulate this concept of anxiety during the simulation event.

### **6.2.3 How was that scenario for you?**

My initial question, when talking to the student paramedic after their participant observation ended, was the same, *“how was that scenario for you”*? All of the simulations I observed were considered learning scenarios rather than assessment scenarios; although this distinction may not be quite so clear, as will be discussed further in this chapter. This was a necessarily open question that the student could have interpreted in many ways but it was surprising that all, except Helen, indicated that they felt nervous or apprehensive during the simulation. The immediate answers are shown in table 6.1.

Table 6.1 – Student answers to the question: “How was that scenario for you”?

ANSWER	STUDENT(S)
“fine”	Helen
“uncomfortable”	David / Larry
“apprehensive”	Fred
“a little bit nerve wracking”	Bryony
“pretty nerve wracking”	Claudia
“nerve wracking”	Graham / Ian
“nervous”	Michael / Natalie
“really nervous”	John
“very nervous”	Ethan
“extremely nervous”	Katie
“sort of panic mode”	Alan



Not one student discussed their clinical performance during the simulation and all, except for Helen, stated a clear discomfort in the process. Why this nervousness (or anxiety) may be felt is explored further in this chapter, as I believe there are several reasons for this. Certainly, when discussed further, students gave many different reasons why they felt nervous. There is some evidence regarding stress in ambulance simulation but this is merely evaluating stress based on ambulance work rather than analysing the stress of the simulation itself. LeBlanc et al. (2005) found inherent stressors in the examination process but there was no examination of these ambulance education simulation stressors. It is even acknowledged in one paramedic textbook that simulation is not a pleasant experience for the student, “run critiques [simulations] can be great learning experiences, don’t consider them to be punitive” (Sanders, 2001, p. 494); this is said without elucidating further. It almost seems to be an unwritten rule in paramedicine that simulation is a necessary baptism of fire to help prepare for the undoubted stress of the job of a paramedic and the reasons why are explored in this study as the data suggested exam stress can be related to simulation learning.

#### **6.2.4 Simulation increases confidence**

Frank suggested that “[the simulation is] ok, I can’t imagine being let out there [on the road] without having done it; I wouldn’t feel very confident about my treatment” and it must be accepted that there is some literature that has suggested that simulation learning increases confidence slightly (Alinier, Hunt, Gordon and Harwood, 2006; Gordon and Buckley, 2009). This echoed data collected for this study; Frank could not imagine being operational without having undertaken simulation. There is also some evidence that some paramedics evaluate the use of some simulations highly (Wyatt, Archer and Fallows, 2007), although this study appears to be an evaluation of simulation equipment rather than the process of simulation learning or assessment itself. Prentice et al. (2011) suggested that simulation was highly effective as a teaching strategy based on participant feedback; staff at a community hospital felt that simulation was a useful way to learn new skills. This is seen in the overall commitment to simulation seen by the student paramedics, who felt that scenarios were fundamental to paramedic education. Another question asked of all participants (both students and tutors) was “would you remove simulation [from the course you are currently undertaking]”? All student paramedics and tutors said no, that simulation should *not* be taken out of the course, some being more insistent than others. Bryony emphatically stated that “absolutely no way [should simulation be removed from the course]”. Natalie argued, “I hate [simulation] but you can’t not do it”; when I asked why, her eyes widened and she shook her head and was almost speechless that I had suggested such a ridiculous proposal.

#### **6.2.5 Simulation is inherently stressful**

It is certain that all of the student paramedics talked to as part of this study not only showed the physical response of anxiety but also articulated this (without prompt) during interview. As already discussed, all of the simulations were learning scenarios rather than assessment scenarios and therefore the examination anxiety of simulation should not have been relevant. Therefore, although the student paramedic feels anxiety about the simulation process, I believe that the problem may be more complex than merely suggesting possible anxiolytics. Suggesting strategies to alleviate anxiety without exploring the root causes may be ultimately pointless. On the other hand, although the physiological effects of stress can be harmful, stressful simulation echoing the stressful nature of paramedicine may help to prepare the student for life as a paramedic. A recent study showed that people who had traditionally stressful jobs (although not paramedics) who undertook stressful event

simulation were found to make fewer critical errors than those who did not undertake the simulation (Tichon and Wallis, 2010).

There is even a possibility that the very nature of simulation is inherently stressful; scenarios seem to mirror the standard psychological test to induce stress, the Trier Social Stress Test (Kirschbaum, Pirke and Hellhammer, 1993). The four defining aspects of this test can be related directly to student paramedic simulation events as already highlighted in this study, specifically:

- i. Public speaking (the verbalisation by the student),
- ii. Mental arithmetic (the calculation of drug dosages, weight and equipment sizing),
- iii. Having an audience (the tutor, simulated patient and crewmate),
- iv. Anticipatory period (the student waiting to be called into the simulation room).

(Kirschbaum, Pirke and Hellhammer, 1993).

It is interesting to note that the test to induce stress was originally intended for individuals; however, similar results were found in group situations (von Dawansa, Kirschbaum and Heinrichsa, 2011). Therefore, simulation may be inherently stressful and the stress of the scenario may be a useful tool in helping to prepare the student paramedic for a sporadically stressful operational career. However, examining possible causes of simulation stress may identify where changes may be made and clear stressors emerged from the data. The consideration of feedback processes and motivation to undertake simulation were highlighted and will be examined further, as will what I believe is a fundamental cause of simulation stress, the relationship between simulation and assessment. However, the assessment concept is related to the feedback the student paramedic receives and this will be explored in the next section of this chapter.

### 6.3 FEEDBACK

*[The tutors] come in and tell us ‘right, you’ve really got to buck your ideas up on certain things’ and it is a real wakeup call on occasions.*

*(John)*

Feedback is the process of giving information about a situation so that future events can be impacted. The word most associated with feedback is loop, the suggestion being that feedback should impact future practice and therefore should loop or feed back into events. Feedback is closely related to simulation; Rall, Mansver and Howard (2000) suggested that “debriefing is the most important part of ... simulator training” (p. 517). As explored in chapter four, a tutor gives verbal feedback at the end of the simulation event, generally a one-way process with some

discussion on salient points. The tutor will usually use a chronographic structure to the feedback, so the beginning of the feedback is related to the early part of the simulation and will follow a time line (without discussing timings) until the feedback for all parts of the scenario is given. An example of the type of layout is shown in appendix F, a typical scenario feedback sheet.

### **6.3.1 Self and peer review**

The student paramedic receives feedback on most of their activities. Occasionally during, but more often immediately after, the simulation; there is also some general simulation feedback during tutorials. The student welcomes feedback as an essential part of the simulation experience, without it they felt that the simulation event would be pointless. Michael stated “it wasn’t until [the tutor] said ‘oh you forgot this’ that I realised oh yeah”. Fred felt that having the tutor was useful to “jog your memory”, something that he felt couldn’t be done by his colleagues and Graham reiterated this, insisting that his “colleagues probably wouldn’t pick up some of the points [of the simulation]”. Bryony stated:

Feedback’s good because you don’t necessarily know how you’ve come across or what you haven’t said, because you’re in such a mind of ‘right I need to do this, I need to do that’ but the bits you forget obviously at the time you don’t think they’re relevant; otherwise you wouldn’t have forgotten them. So it’s quite good to go over them.

The tutor Yolande looked surprised when I suggested that students could perhaps give their own feedback regarding the simulation event and questioned “how can [the students] know if they’re doing it right”? This was echoed in the student reaction, Natalie reacted with incredulity when asked if she might find the simulation more comfortable if she was given the opportunity to self assess her scenario, “oh no, that couldn’t happen, how do I know if I got it right”? Bryony stated “there isn’t much you can do, at the end of the day you need to have someone critiquing what you’re doing” and Yale noted that “the students can’t feedback their own scenarios, how do they know if they’ve got it right. Although Zach did admit later in the discussion “perhaps we just like to keep [the students] reliant on us … show they need us or we’ll be out of a job”. Zach laughed after he had said this and on face value it appeared to be a flippant, joking comment but there may have been some truth to his remarks. Admittedly encouraging a student to self assess if not familiar with the framework, may be time consuming and uncomfortable for tutor and student alike. However, there is some suggestion that students may learn more effectively if peer assessment is used (Topping, 2005; van den Berg, Admiraal and Pilot, 2006).

### **6.3.2 Fair feedback**

I felt that all of the feedback I observed was fair and clinically appropriate. As an example, I think Gordon could have been faster administering oxygen during his simulation and the tutor had felt the same and had given feedback regarding this to Gordon.

*Feedback to Gordon from tutor:*

Tutor	That's great, so how do you think that went?
Gordon	Hmm, OK. I could have done better.
Tutor	So let me see, you came in did your checks, and then went straight for primary [survey] ... then oxygen, good but you need to get things going quicker you know.

On the observation sheet I used to collect data during the simulations I have noted that the feedback given Gordon was “good … fair and well given”. In general, the feedback I observed was overwhelmingly positive and discussed in a pleasant and supportive atmosphere. The tutors all tried very hard to be as gentle as possible, there were no stern looks and no negative language. All of the students had positive things to say about the tutors; even John (who is quoted at the beginning of this section) when explored further, regarded the tutors telling him to ‘buck your ideas up’ as a helpful process. This was regarded as given without malice to help point the student in the right direction, “the tutors don’t want to fail you” he reiterated. However, the atmosphere in which feedback is given may be of limited importance and there is some evidence that feedback, regardless of whether given in a supportive atmosphere or not, can improve performance (Loewen and Eriam, 2006). Although it must be accepted there is scant evidence on the efficacy or otherwise of feedback systems in simulation (Fanning and Gaba, 2007).

### **6.3.3 The praise sandwich**

Although the feedback I observed was given in a pleasant and supportive way, Claudia’s tutor, I noted in my field journal “started by telling [Claudia] how great the scenario went, then basically ripped it to pieces and then ended by saying how good overall the scenario was”. This was not done in a harsh or negative manner but clearly pointed out areas for improvement which greatly outweighed those parts of the simulation the tutor felt were adequate. During the simulations, negative and positive feedback was given and it was interesting to note the some tutors used the ‘praise sandwich’ technique employed by some ambulance educators. This technique aims to hide

feedback regarding bad practice within positive reinforcements and is shown in the feedback given to Ivor.

*Feedback to Ivor from tutor:*

Tutor	That was great, good, thorough but you know you've really got to think about differential [diagnoses] ... you've got to think what else it could be, you know [the patient] could have died.
Ivor	Yeah I know, I know.
Tutor	But you know, it was methodical, you ticked all the boxes. It was good yeah.

The students accepted this as part of the feedback system, Gordon accepted that “[the tutors] have to tell you the bad with the good, no point just saying yeah yeah, it was great”. Ivor suggested that “it’s good to have the way [the tutors] do it … they tell you something good then something bad then try and leave you on a high”. However, some consideration must be given to the importance of the negative aspects of feedback as vital to the process. Van Dijk, Zeelenberg and van der Pligt (1999) suggested that frustration and disappointment associated with some feedback events may be related to the absence of positive feedback rather than the presence of negative feedback. This did not occur during the simulations I observed and all tutors gave at least one positive feedback item, however tenuous or irrelevant.

#### **6.3.4 How tutors learn to give feedback**

Prior to starting this study, I was familiar with the development pathway for tutors in the ambulance service, having undergone this development myself and I knew the general feedback techniques taught. Although having researched the tutor course documentation, I was surprised to see no formal outline for giving feedback, not even the praise sandwich technique discussed above. Zara, who had been through the same ambulance tutor development as me, suggested that “you learn [to give feedback] on the [tutor] course” but when questioned further struggled to identify techniques or principles learned. When I asked the tutors how they felt they had learned to give feedback, Yale admitted that “it’s only when I started [giving feedback] and just pissing students off that I thought, ok right, was a bit hard there, bring it in a bit. Although the tutor may feel they learn to give feedback in a structured development process, they may learn through the process of actually giving feedback and from personal experience.

According to my field journal, “all of the tutors seem to say the same things in the same way, the same things I heard when I was a student and said when I was a tutor”. Although there may be no

obvious script for the tutor to follow the way there is for students (as explored in the last chapter), when asked how she learned what to say to students when giving feedback, Yolande said “I don’t know, I just picked it up, I remembered what the tutors said to me when I was on my course”. Therefore, there may be something of an oral tradition to feedback strategies, as there is for so much surrounding student paramedic simulation as discussed in chapter four. What is clear is that the feedback that was observed seemed to follow a distinct one-way process from the tutor to the student paramedic; the feedback seemed to be something given by the tutor and taken by the student.

### **6.3.5 Feedback as something to be given**

I noted in my field journal and seen in the short excerpts in this section, that most of the feedback observed was from the tutor to the student rather than a two-way process. When the student paramedic had completed the simulation, the opening question from the tutor was always some permutation of “how was that for you”? This is an interesting echo of my initial question during participant interview. However, the question asked by the tutor did not elicit anything other than a very brief response, as shown in the feedback to Gordon earlier in this section and this feedback to Hannah.

*Feedback to Hannah from tutor:*

Tutor	OK, so how did that go?
Hannah	Yeah good.
Tutor	So, right, let’s go through [the scenario].

When I asked Hannah why she gave such a short answer, she suggested, “[the initial question is] not asked to have you ... list things. You don’t say how it all went, that’s what [the tutor] does”. It seems clear that the student accepts that the tutor gives the feedback and the student receives the feedback. This may be for a very good reason, there are significant time restraints that mean that tutors have a large number of students that they need to observe in a relatively short time scale (the average simulation I observed had a feedback time of less than five minutes). Ivor argued, “[the tutors] tell us what’s wrong, we can ... answer back but I’m always aware that there’s someone else to come in [to the simulation]”. When I put it to the tutor discussion group that they spent about 95% of the feedback time giving feedback and the student paramedic had talked for about 5% of the time, Yale accepted “yeah, that’s about right”. Zara noted, “it’s not two-way is it; [the student] does something wrong and then we tell them what they did wrong, they don’t tell us do they”? This may

be what works for both student and tutor (and of course, organisation). Certainly the tutors may feel this one-way process for feedback is appropriate, “this is how [scenario feedback is] done, we tell [the students] what to do and they do it” noted Zach.

## 6.4 SELF-CRITICISM

*[Not doing well in a scenario] is a mark of failure. I've just got a very high drive to succeed, so any sign of failure at all, I'm unhappy. I want to be the best at what I do. This is something I really, really, really want to achieve.*

*It's just the self-expectation thing; I don't expect to fail things.*

*I'm probably more critical of myself than most people.*

(Alan)

This part of the chapter deals with an issue of anxiety that was highlighted during participant observation and interview, that of overly critical self-appraisal of simulation. In other words, several students were critical of their performance during the simulation, in contrast to my experienced tutor perception. As Goffman (1959) stated “a team with only one member can take a very dark view of itself” (p. 133) and several of the students seemed to be their own highly critical audience. Alan perhaps highlighted this concept best with his quote at the beginning of this section but Claudia also admitted “[simulation] is a confidence thing, I'm my own worst enemy”. Many students did well during the simulations I observed but were overly self-critical when I asked how they felt the simulation went. They verbalised their lack of minor assessment details or irrelevant interventions as major failures that influenced the whole experience. Natalie suggested, “[the simulation] was horrible; I was terrible, nothing went right”. However, she did very well with the set scenario and was kind to the simulated patient and clinically effective but obviously felt otherwise.

### 6.4.1 Self-critical perfectionism

I believe some students clearly have an issue with self-critical perfectionism. This is the tendency of a person to, despite evidence to the contrary, be critical of their behaviour or performance. Being self-critical may be said to be vital to critical thinking (in the non-ambulance meaning of the term) and there is a suggestion that self-evaluation needs self-criticism to help one learn from both good and bad practice. However, being overly critical of oneself has many negative effects from interpersonal difficulties to depression and mood and personality disorders (Gilbert and Irons, 2004). Shame memories or feeling memories that a person may have of being rejected or criticised may provoke feelings of increased self-criticism. Therefore, when we put those students who have a

tendency to self-criticise in an arena where criticism is the language, we may provoke a spiral of shame-based self-condemning. In other words, although we may try feedback strategies that soften the blow of poor performance, the use of critical language and indicators may inhibit student learning. There is of course a possibility that this self-criticism may be related to the issue already explored, that of the feedback process. The student paramedic may be critical in anticipation of the critical language they feel they may receive in a tutor or peer feedback structure. How both the student paramedic and tutor feel about this critical appraisal is explored further below.

#### **6.4.2 Student paramedic perception**

Natalie stated that she went “over and over bad scenarios in my mind, I just can’t seem to let them go” and humiliation, inadequacy and the fear of failure may inhibit learning through damaging confidence and self-esteem. Helen, the only student not to say that she felt nervous when asked how the simulation went, instead felt “silly, something like that just throws you and you lose your train of thought”. When put to the student paramedic discussion group, that perhaps they perceived constructive feedback as negative criticism, the same common themes emerged, that this is the way people were. Gordon admitted “I just can’t take [feedback] I always think they’re having a go at me” and Ivor agreed that critical feedback was “to get us used to getting a bollocking from our crewmate [when we become operational]”. This has some truth as, although crews tend to be on best behaviour when they see me, occasionally operational staff who do not know who I am act in a certain way in a crew room or when a patient is not present. Their manner is sometimes a little harsh and sometimes somewhat aggressive. However, as discussed in the feedback section of this chapter, the feedback given as part of the simulation event itself was perceived as fair and accurate. Therefore this concept is more the student’s perception of *any* feedback as critical and harmful to confidence. Gordon accepted “it’s not about [the feedback we receive from tutors], I just hate being told off. When I suggested to Gordon that the tutor wasn’t telling him off, he argued he “see[s] all feedback as criticism, I can’t help it”.

#### **6.4.3 Tutor perception**

Yolande, a tutor, noted that “you only have to say one little thing and that’s it, you get some real drama queens that’ll just carry it on”. The inference being that some students needed to ‘get over’ the critical aspects of simulation feedback. In my observations there was nothing to suggest the feedback was critical or hurtful or unfair in any way. As explored in the feedback section of this

chapter, the students felt the feedback was not critical and students had nothing but positive things to say about their tutors. However, the tutors occasionally felt the students were perhaps overly sensitive. Yale admitted “you always get one or two [students] who you’ve got to be careful with how you [give them feedback]”.

#### **6.4.4 Causes**

Alan noted that he had “always been really hard on myself, ever since I was a young boy” and when asked why, explained that his parents had always been “pushing [him] harder and harder, nothing was ever good enough”. Henry, who the tutors had identified as being overly critical suggested this may be caused by “a drive … failure is not an option, I’ve always been like that, I don’t know why”. When I explored further, a long discussion ensued and Henry suggested that there was a possibility that early experiences of education had left him with, in his words “a chip on [his] shoulder” and teachers that had previously mocked his performance has made him, again in his words, “a perfectionist”. There was no suggestion that this tendency to be overly critical was due to the student paramedic feeling that they should find fault because that is what they think may be expected of them. Ivor felt that “how I am is how I am … I’ve always been hard on myself, [the ambulance service] didn’t make me that way”. With this tendency comes the perfectionism that, no matter how well a student does, the simulation is never regarded as satisfactory. Of course, there is a difference between personal standards and self-critical perfectionism and this idea of being overly critical or critical of non-existent aspects of the simulation is what makes this dysfunctional. This self-critical perfectionism has been linked to depression and anxiety (Dunkley and Blankstein, 2000) and although there appears to be no definitive evidence that it causes either of these two issues (Clara, Cox and Enns, 2007); there are some negative effects that were noted in the data.

#### **6.4.5 Support mechanisms**

Some of the students talked about the community feeling in the group, Claudia stated that “we’ve all worked together and we all support each other, we’ve just grown as a group I think”. Hannah felt that “[the students] all just really gel, really bond and we sort of feel like a family”. Yale comforted a student who felt they had done badly by giving examples of his poor performance during simulation and stating that “we all have bad days”. However, there were occasions when the students appeared apart from the group, my field journal noted “Anthony is definitely a loner, he eats his lunch on his own and doesn’t seem to have any friends in the group”. Dan felt “you’re on your own

here, I'm not here to make friends, I just want to pass [the course]". There may be a here relationship to inadequate social support, so the student who feels the least supported by their colleagues and tutors may be the one most likely to exhibit a critical manner (Dunkley, Zuroff and Blankstein, 2003). The tutors appeared to try and negate this self-criticism and when I discussed this with the tutor group, Zach stated "it's partly trying to make [the students] stop being so hard on themselves". Effective social support has been argued as key in encouraging students to learn; particularly the social support from the supervisor (who is the tutor in the ambulance education environment) and the wider organisation (Chiaburu, Van Dam and Hutchins, 2010).

#### **6.4.6 Perfectionism as driver**

This perfectionism may be a hindrance to personal growth; conversely it may drive the student to achieve greater knowledge and skills although it is clearly a cognitive state that may be harmful to continued mental wellbeing. By allowing the student to feel overly self-critical, we allow the student to continue being self-critical by providing a critical environment. By using usual feedback approaches where critical language is used (albeit in a supportive way), this tendency to perfectionism may possibly be harming the student. The propensity of the student towards being overly self-critical can be easily viewed and heard in the language of the student. The student that, however well they perform, denigrates their accomplishments and focuses on the parts that may have been less than perfect (in their definition of the word perfect) can be easily noticed. Valentinera et al. (2011) suggested that those with poor self-esteem were more likely to prefer negative social feedback. It is worth noting that self-critical perfectionism can occasionally be observed as over confidence or cockiness and this must be taken into consideration when formulating approaches. Therefore, self-critical perfectionism may be a contributory factor in some student paramedic anxiety feelings.

### **6.5 MOTIVATION**

*Some scenarios and some tutors can make it a relaxed environment and I learn a lot more through a scenario. I hate doing them but actually physically knowing why you're going to be doing it and actually doing it on somebody gives you that basic understanding of why and feeling that, yes, you can do it right.*

*(David)*

Motivation is the process by which goals are achieved. It is a set of processes that cause us to act, whether it is getting up in the morning to go to work to achieve the monthly wage or eat a sandwich

because we are hungry and this section of the chapter concerns motivation and what may motivate a student through the simulation process. There are many theories of motivation and some can be applied to student paramedic education and will be related to the simulation event.

### **6.5.1 Reasons to undertake simulation**

John noted, “if we failed [the assessments] we’re out. So that’s it, everybody got really nervous” and Ivor agreed “if I fail this course, that’s it; I’m out of a job”. The incentive theory of motivation would suggest that the external rewards associated with paramedic education motivates the student through the course and therefore through the simulation event. Some of the student paramedics I observed were on the initial part of their development. If they had failed to achieve at this stage, their contract of employment would be terminated; quite an incentive to pass a course of study. Therefore, I would suggest the first motivation to go through the simulation is fear of job loss. If simulation is failed, the student paramedic would fail the course and their continued employment would be put at risk. This suggests a learning and assessment relationship in simulation. Simulation must be ‘passed’ to maintain employment.

Hannah accepted that “[being a paramedic] is a good job, I know we work really hard but the pay’s really good. I have a friend who’s a nurse and we get loads more [pay]”. Of course the monetary reward for all of the students cannot be dismissed, and although students may be on a reduced rate of pay, the NHS Agenda for Change banding still allows for the student to be in full-time employment whilst developing. This reason for undertaking simulation is that the student paramedic is in paid full-time employment whilst developing.

Michael admitted that he “always wanted to be a paramedic, I couldn’t imagine doing anything else” and Bryony suggested that “[being a paramedic] is all I ever wanted to do, even when I was at school”. The humanistic theory of motivation suggests that when basic genetic needs (such as shelter and food) have been met, then high cognition states are strived for. Perhaps most famously, Abraham Maslow’s hierarchy (1943) suggested that fulfilling potential becomes the driving motivation once initial needs have been met. Therefore, the student paramedic fulfils their ‘potential’ to become a paramedic.

As already discussed, when I asked the student paramedics and tutors if they would prefer to remove simulation from the course, many professed disgust that I would suggest such a thing. Graham stated “I think scenarios should be in a course ... it’s better to learn in a classroom and make

mistakes than make mistakes out on the road” and Gordon argued “I think we should be in here making mistakes, better than killing people out there [on the road]”. Therefore, there may be some feeling of safety in simulation, as explored in chapter two of this study and the student paramedic can make mistakes in the safe environment of the simulation event.

### **6.5.2 Motivation to remove simulation**

Natalie argued “you have to have scenarios, you have to; what else would you put in the course”? The tutors also professed shock at the suggestion of replacing simulation with something else. Will, Yolande and Zach all spoke at the same time when I suggested removing simulation such was their keenness to disagree but all answered very clearly that this idea was not to be countenanced. When I asked why, Zach stated “you have to have scenarios, how else do you know that the students are safe”? In the earlier parts of this chapter, the students professed anxiety about the simulation process but clearly felt it was a necessary part of their development. This could be for a number of reasons or motivations explored above with possibly the fear of unknown (the unknown being not doing scenarios) being greater than the anxiety of the simulation. However, there is some difficulty in ascertaining exactly what drives the student through the simulation process as each student may have different motivators at different times throughout the course, although it is clear that motivation is more complex than having to do the simulation as part of the course because their continued employment depends on it. Several of the student paramedics discussed their motivation to go through the simulation and (by extension) the course of study and the results showed a number of different motivators. What became apparent is that simulation and motivation to undertake simulation are closely linked with passing assessment/evaluation/graded score.

## **6.6 ASSESSMENT**

*You're under exam conditions. You know even though it's only a practise, it still feels like an exam condition.*

*(Ethan)*

Assessment is the measuring of skills and knowledge, beliefs and attitudes. It is an educational paradigm that has many strands and much discussion exists in literature. Assessment may mean different things to different people, even among the ambulance education community, but the assessment discussed in this study refers to the grading or marking of simulation as either pass or fail, satisfactory or not satisfactory. However, as explored in chapters one and four of this study, not

all simulations that attract a fail mark means loss of employment (or any repercussions at all in fact) but there is a relationship nonetheless. It became clear early in the data collection that assessment and simulation may have a very close relationship and needed exploring at length. Therefore, it seemed appropriate for organisational purposes to delineate: a) the brief overview of role as aggravating the perception of assessment as part of simulation and b) an exploration of these broad and deep concepts.

### **6.6.1 Ambulance assessment**

Ambulance tutors are bombarded with assessment language and procedure: formative, summative, quality, performance assessment, portfolio assessment, competence assessment, OSCE, self- and peer-assessment, on-going assessment and on and on. The language of assessment is varied and immense and this is shown in the range and types of assessment used in ambulance education. All of the above assessment strategies are expected to be used by ambulance services. When I put the key word assessment into the ambulance service intranet search engine, the competency sheets titles (errors included) shown in figure 6.1 were generated.

*Figure 6.1 – List of ambulance service assessment sheets.*

Peak flow Assessment assessment sheet / ALS Assessment sheets / CPD Assessment Sheets Competency Assessment Sheets / ILS assessment Sheet / ALS assessment Sheet / Work Based Assessment sheets / Capacity Assessment Pro-forma / BP Assessment Sheet / KED assessment sheet / Suctioning Assessment sheet / LMA assessment sheet / BVM Assessment sheet / Moving and handling assessment sheet / NMI Assessment sheet / Mechanical ventilator Assessment sheet / LMA assessment / assisting infusion Assessment sheet / assisting intubation Assessment sheet / Trolley Cot Assessment sheet / Manger Elk Assessment sheet / Pulse oximetry Assessment sheet / Rescueboard Assessment Sheet / Box Splint Assessment Sheet / IM injection assessment sheet

### **6.6.2 Simulation is associated with assessment**

Graham suggested “you still think of it as an assessment, as a pass or fail sort of thing even though it’s [not]” and “it’s not a pass or fail no, but you’re under the pressure of having to get through this assess [sic], well this scenario”. Graham’s (almost) use of the term assessment to describe his simulation event was indicative of the general feeling among student paramedics. As discussed in chapter four, a pass or fail simulation that impacts their future progression is a relatively rare event for the student paramedic. However, it was clear that the students felt that the simulation event was assessed in the pejorative meaning of the word, even though they understood that it was not. Gordon felt “it’s an assessment isn’t it? No it’s not pass or fail but it’s like an assessment” and Ivor

noted “it’s like an assessment ... even when they’re not marking you down”. All of the student paramedics used the word assessment when being interviewed and discussing their simulation, even though their simulation was not an assessment that required ‘passing’. This shows a relationship in the student paramedic mind between simulation and the assessment process. Why this may be so is more complex than mere exam anxiety, although there is a possibility that this has some effect on the student paramedic’s anxiety when undertaking the simulation process.

### **6.6.3 Exam anxiety**

Bryony stated, “it’s the exam, the exam always gets me” when I asked what she disliked about simulation and Alan felt “it’s the exam conditions [in the simulation] that are hard to deal with”. However, some test stress may aid development, the often-held belief that debilitating test anxiety increases tension and produces lower evaluation scores has been challenged. There is some suggestion that test anxiety may actually increase test scores and facilitate more problem solving coping strategies (Rafferty, Smith and Ptacek, 1997). Although students and tutors greeted these findings with incredulity, Yale noted, “we don’t want [the students] to be really nervous, it just freezes them up, they can’t think properly” and Hannah agreed “[the idea that exam stress] helps, well it doesn’t help me”! There has been some research carried out on exam stress, Keogh and French (2001) suggested test anxiety can reduce motivation and this appeared to be a fundamental issue raised by students. It became clear very early in the data collection process that exam = stress and simulation = exam; therefore, simulation = stress.

### **6.6.4 Reasons**

Graham suggested, “[even though the simulations are not pass or fail] they just build up the nerves”. This shows the student knows that simulation is not an examination in the punitive sense of the word. However, the reasons the student associates simulation with assessment are complex. When reviewing participant observation notes and my field journal, there are some aspects of the simulation experience that could unwittingly associate simulation learning with simulation assessment. As explored in chapter four, the student paramedic does have a number of formative and summative simulation assessments throughout the course and I believe these are so embedded in the curriculum that this inevitably becomes the focus for the student. Therefore, all simulation is assessment, whether it is graded or not. Why this may be so, is partly identified below.

Ian argued, it is “the same, [simulation learning or] being assessed” and Hannah identified “we do [the assessment] exactly how we do it normally”. Normally meaning during simulation learning, Hannah argued that simulation assessment was identical to simulation learning. This is due somewhat to the physical setting during scenario learning, as this is identical to the setting used for simulation assessment, the rooms and equipment are the same. The tutor is the same tutor sitting behind the same desk making the same notes on the same paper. The only difference seems to be the grading of the simulation as either pass or fail; no other obvious physical differences apply. The pictures of a typical simulation shown at the very start of this thesis could be either a simulation learning event or a simulation assessment event. The tutors felt that having the same physical setting aided the student paramedic; Zara felt “[the students] feel comfortable if we do it the same way, they know where they are”. However, when I then put this to the student discussion group, that they felt comfortable having the same physical environment for both learning and assessment simulation, Gordon suggested “I don’t think [it helps], it makes me feel like all [scenarios] are marked”. Therefore, one of the reasons the student associates simulation learning with simulation assessment is the physical setting is the same for both.

Ethan suggested “when you get someone there marking you, with a pen and paper taking notes ... you need to be capable of doing what you need to be doing”. Fred made similar observations, “[the tutors] have a sheet which you know you’ve got to tick the boxes on”. During the simulations I observed, the tutor made a note of key points during the scenario; did the student check for dangers, what drugs did the student give to the patient etc.? When the simulation finished, the tutor read from the paper and gave feedback but at no point during any of the simulations, did the tutor indicate that the students had passed or failed. No other similar descriptors were used such as satisfactory or not satisfactory or competent or not yet competent. In an echo of the reason above, the tutors felt that comfort derived from the familiar was more important than the splitting of the learning perception and the assessment perception. Yale argued, “surely it’s better to [be familiar] than give [the students] a new way of doing things”? However, when this was put to the student paramedic discussion group, the overwhelming feeling was “although, yes, it’s good to [be familiar], you can be a bit too same” as Hannah advised. Therefore, another reason for the association is the feedback systems are the same in both simulation learning and simulation assessment.

Alternatively, simulation assessment may be classified as learning, just a different type of learning and one that is uncomfortable for some people. However, the students felt that the familiarity identified by the tutors as a reason to link learning and assessment, was less important than

distancing the two. As already explored in chapter four, the simulation structure for learning events and assessment events are almost identical.

## **6.7 SUMMARY OF THE CHAPTER**

This chapter's topic was the first one that inspired this research, as I was aware that simulation learning was disliked and sometimes even hated in paramedicine. I have watched countless students and colleagues, exceptional clinicians that have a broad knowledge of patient care, tremble with fear and make silly errors. It was no surprise to me that when asked how they felt about simulation in general, the vast majority of the participants in this study expressed their nervousness. However, when I noted in my field journal that all of the simulations I observed were not marked or scored in any way, it seemed more curious to me that most students would express their hatred of the simulation process. When I reflected on the interviews, the issue that I found most intriguing was that when I asked the participants if they felt less or more nervous on road with a real patient, all said they felt less nervous with a sick or injured person than in a simulated environment. This seemed to me to be rather absurd. How could it be possible to feel less nervous in a situation where a person was in real danger of losing their life; where a person could be in pain, could be bleeding profusely? There did not seem to be any sense in a situation where a clinician could be putting needles and potentially lethal drugs into someone and this caused less nervousness than a scenario where no harm could be caused and the worst situation that could occur would be negative feedback from a tutor.

My position in this chapter is that student paramedics find simulation learning anxiety provoking; a theory borne out of both interview data and my observation of physiological alterations found in students. I also believe many student paramedics are overly self-critical of their performance. This is perhaps a tendency that originates in childhood but is reinforced by the strategy for critical feedback used in ambulance services. The concept of rite of passage was familiar to students and they regarded the simulation hurdle as an experience to be endured, a necessary evil to make them a better and more effective clinician. Perhaps the most revealing theory to emerge from data is that the student paramedic views a strong (but in many ways not acknowledged) association between simulation learning and simulation assessment. This association is clear in the student paramedic mind, they regard all simulation as assessed in some way and that may be true. As explored at length in chapter four and analysed in this chapter, there appears to be no obviously discernable difference between simulation learning and simulation assessment in the opinion of the student.

The simulation learning experience is not the simulation assessment experience but students invariably link the two. This may be for very good reasons educators and the ambulance service does nothing to separate these two entities. However, perhaps they do not need separating, perhaps the student needs to go through the process to ensure they are fit to work in the undoubtedly stressful world of emergency medicine. Anxiety is a common and essential physiological process and paramedicine a stressful profession. However, whether this needs be transferred directly experienced through paramedic education is debatable. This seems unnecessarily cruel, with no evidence to suggest its usefulness. Reducing anxiety is not necessarily about increasing pass rate or examination scores (the usual markers in literature), it is about ensuring the student receives the best possible learning experience. Therefore, I would suggest that simulation should be made less stressful. Putting the student through times of stress does not seem the wisest way to get them to prove their worth; it merely sours the experience for all future simulation events. But perhaps there are deeper, larger issues here, like those of power, control and hierarchy embedded within both educational and institutional structures that render a deep questioning of simulation learning currently impossible. It is these that I will explore in the next chapter.

## CHAPTER SEVEN – CONTROL AND HIERARCHY IN SIMULATION

*It's the tutors' job to teach us isn't it? We sit there and they teach us what we need to know. I mean, we can't learn by ourselves can we?*

*(Dan)*

### **SIMULATION (I WAS ONLY FOLLOWING ORDERS)**

*He receives his orders and goes in, doing what he is trained to do. Being in the trenches proves frustrating and dangerous and he knows that silly mistakes (however seemingly insignificant) can cost him dearly. The officials appointed over him have given him orders but he knows there has to be a grand plan, a reason for doing this. Why else would the senior officers be telling him to do these things? Of course the bosses also have their orders from above; so here he is on the ground, going through this awful time but it will soon be all over, one way or another.*

*The General and his officers have been given their orders and come to see the men on rare occasions. They just come in their fancy uniforms, show their faces and then go again. No chance of them getting stuck in, getting mired up to their knees in blood and shit. The man with the gold pips on his shoulder tells him to get going and he jumps to it. The guy with the gold pips could tell him to do most things and he would do it, that's just the way it is. He has been told to buck his ideas up and he is making sure that the people in charge are happy.*

*He charges headlong into the fray, weighed down with kit and desperate to make his mark. Half an hour of bloody battle occurs as he tries to defeat the enemy; close hand-to-hand combat that is painful for all.*

*The battle is over and he was told it would be like this. Long periods of boredom followed by moments of sheer terror but he carries on because that is what he does. He thinks he has shell shock but would not dare say anything; the officers would just laugh at him and tell him to get on with it.*

*They must know what they're doing otherwise they wouldn't be tutors would they?*

*(Natalie)*

## **7.1 INTRODUCTION**

This chapter explores aspects of the data collected through the lens of critical pedagogy. In general, Critical Pedagogy aims to encourage the learner (whether student or educator) to gain a critical understanding of their world and challenge unfair or unjust norms that may otherwise be taken as given. The idea that a learner could ‘rise up’ against the system as a result of a critical understanding of their position, originates most famously with Freire’s work and especially his seminal work, *Pedagogy of the Oppressed* (Freire, 1970). The concept that a student could challenge the organisation, although originally more relevant to the junta that Freire was imprisoned by, is no less relevant for this study. This chapter aims to show how the student paramedic is irrevocably linked to the organisation in complex relationships that show an uneven balance of power. I am suggesting that the student is part of the educational/institutional structure and that this structure itself needs to function differently, in a less controlling and non-hierarchical way. The works of theorists such as Shor (1992) and Kinchloe (2008) have suggested that the educator has as fundamental a role to play in critical pedagogy as the student. By becoming a critical researcher and shining a spotlight on commonly held beliefs and norms, by going beneath surface meaning and received wisdom, real change may be affected. This idea has been an essential driver for me in this study. I have accepted the norms of simulation learning and as part of the organisation, kept the student in a clearly defined role. There may be a suggestion that the student feels comfortable in this system, it allows them to be familiar in an education setting that promotes following (the organisation) and needing (the direction that the tutors provide). Also, it is not uncommon for critical educators to be faced with some students who may resist the greater responsibility that accompanies a less hierarchical learning environment (Reynolds, 1999).

The vignette at the beginning of this chapter echoes the experiences of World War One, the beleaguered soldier in the trenches directed by the hapless and ineffectual commanding officers that are many miles from the front. This can be seen in the lions led by donkeys concept, where the incompetent and indifferent command do not care about the individual brave soldiers but merely what they can achieve as a unit to advantage the command. In this case, command being the organisation and the soldier being the part of the unit of student paramedics. This can be seen in the themes of this chapter; in the control the organisation has over the student and the clear signs and symbols of hierarchy in the ambulance service.

Although the themes of this chapter may seem discrete and separate from the earlier themes, this chapter brings together topics already seen in this study. The concept of autonomy has already been discussed in chapter four; the organisation makes the student feel as if they are seeking autonomy of practice as a paramedic; although as will be seen in this chapter, this aspiration may be illusory. Critical pedagogy is closely related to these concepts found earlier and in this chapter; the power held by the tutors (and even some of the students) has already been mentioned in earlier chapters. Chapter four, perhaps more than the others, sets up the background for why critical pedagogy themes are useful to explore in this chapter and discusses the play of simulation and relates it to real patient management.

As some of the data presented and discussed in this chapter will show, the student needs the tutor and the student needs the organisation; who else will teach and allow the student to be a paramedic? However, the questioning and analysis of current roles and power relationships is a necessary first step to creating better conditions of possibility for critical pedagogy and this is the work that this chapter begins. The ambulance service as organisation is central to this part of the study, perhaps more so than other chapters, the organisation defining the roles and behaviours of both the student paramedic and tutor. The students and tutors are involved in a relationship with each other only within the limits of the organisation. They do not, or extremely rarely in my experience, take part in social situations outside the work environment. The organisation is seen in several dimensions in this chapter and not always as the holder of power and control. This is because the student forms allegiances with the organisation, becoming power-holders themselves. In the sections that follow, I look at the two central issues of control and hierarchy within the organisation as a whole and how these circulate in the context of simulation learning. I believe this analysis goes some way to exposing how power operates within paramedic educational structures. This in turn helps us understand the seemingly irrational fear and anxiety surrounding simulation learning events, even when these events are not assessed.

## 7.2 CONTROL

*We try and get the students to feel like they're part of  
[the ambulance service].*

(*Yale*)

On the surface of it, it appears as if relations between tutors and students on the course are harmonious and consensual. Consensus is the idea that two 'sides' reach agreement (consensus) via

negotiation to reach a way forward on an issue. Negotiation occurs between the student paramedic and tutor so that both are able to meet the needs of the other and what the needs are can be varied. Although the general view for the student paramedic is that the goal of being on the course is “to be a paramedic” as suggested by both Dan and Gordon. The goal of the tutor is, in the words of Yale, “to get the students through the course”. However, as with all effective negotiation, it does take a certain amount of give and take on both sides. If negotiation is effective then consensus can be reached and the student passes the course of study and attains their goal of becoming a paramedic (and perhaps on a more pragmatic note, learns something demonstrable!). Although Goffman (1959) suggested that consensus in interactions rarely occurs and Hargreaves (1972) argued that the concept of pseudo-concord is the best the teacher and learner can achieve. Three types of pseudo-concord were identified in the data; these are working compromise, hegemony and covert resistance.

Zara noted that “sometimes [the students] are ‘why do we have to do [scenarios], I can do it on road’ ... we have to explain why [scenarios are run]” and this working compromise is the most common type of pseudo-concord according to Hargreaves (1972). This is where there may be some conflicting ideas on how to achieve the common goal but consensus is reached, as the tutor is willing to give (in terms of information). So as seen with Zara, a tutor, the negotiation occurred with her trying to explain why simulation is a necessary part of the course. There is still some conflict and that is always a possibility in the working compromise. When put to the student discussion group, that this explanation helped the student to see the reasons for simulation, Hannah felt that “[knowing why we do simulation] does help, still don’t agree with it though”!

Yale felt that although explanations worked to some extent to help the student and tutor reach consensus, sometimes “you just have to tell [the students] to just do it, end of”. This was echoed by a student paramedic, Ivor admitted “[the tutors] just tell us to get on with it sometimes; no argument, no questions, just do this, that, the other”. This pseudo-concord can be regarded as hegemony. The tutor executes a particular tradition (of simulation learning) and there is no room for negotiation, or even negotiation about having negotiation. There is still conflict in the situation and that is acceptable for the tutor, “they don’t have to like it they just have to do it” stated Yale. Here the tutor appears to be in control, largely defining the situation and the conduct of all within it.

Gordon suggested that “some [tutors] I’ve had, I don’t know if I can say this, but they’ve been shit; I’ve known more than they have”. When I asked Gordon if he let the tutor know his feelings, he

admitted “oh no, it was great; we’d sit there and wind [the tutor] up and they never got it”. Here the student feels in control but makes the tutor feel that the student is submitting to the tutor’s will. This can be seen with Gordon’s example, he felt that previous tutors on previous courses had been less knowledgeable and able than him but he exploited the situation to a certain extent. The secret pleasure for Gordon was that he was able to have fun at the tutor’s expense. There is some suggestion that tutors fear this pseudo-concord most of all. When I put this to the tutor discussion group, that there may have been occasions when the student paramedics knew more than the tutors and that the students may have perhaps experienced the situation rather differently to themselves as tutors, Zara rather defensively said “oh it’s never happened to me, I’m sure; I’ll always say if I don’t know something”. When questioned further, that Zara would have to not know that she knew less than the student, that this was part of the ‘game’, she reiterated that she was certain that she “would know” that a student knew more and would adjust her teaching accordingly.

These instances reveal the attempts at control of students, and learning events like simulation, by the organisation/educational system. A key reason why students may stop short of overt resistance is also the reason why working compromises are more evident, that students want to become paramedics. To do this, the students are required to identify themselves with the ambulance service, Ethan admitted, “you’ve got to impress [the tutors] and show you’re confident enough to make the grade. If that means doing what they want you to do and be what they want us to be, then that’s what you’ve got to do”.

Claudia stated, “when we all first got told, right, we’re going to do the scenario kind of thing, we were all just like, no way”. When I probed further, Claudia agreed she “now just gets on with it”. Such submission involves some degree of self-identity that is surrendered to the collective force of the ambulance service rather than just to the tutors. However, there may be some overlapping of one and the other and this will be discussed further in this chapter. Hannah was sure “the tutors are in charge, of course they are” and Ivor felt “[the tutors] have to get us to be [ambulance service name] paramedics”. The tutor appeared to get the student paramedic to identify with them and the ambulance service. Hannah stated tutors wanted her to become a specific ambulance service paramedic, not just ‘a paramedic’. This idea is also seen in control mechanisms such as wearing the organisation’s uniform and using the organisation’s words and phrases. It can even occur by the telling of ‘war stories’ to get the student to identify with the tutor role of paramedic.

### **7.2.1 Physical control**

There is also the rather obvious control of the student body through a physical regime, a way of physical conduct and action. I noted in my field journal the same physical actions in the same way for each simulation event. The student paramedic would walk in a straight line to the patient, kneel down, talk to the patient and:

- i. Put the bag on the floor,
- ii. Zip open the bag and place it flat,
- iii. Take the simulated patient's radial pulse,
- iv. Take out the stethoscope and sphygmomanometer,
- v. Take out and use systems assessment equipment,
- vi. Pack up the bag and zip together when simulating taking a patient to hospital,
- vii. Sit on the floor (or occasionally stay kneeling) whilst receiving feedback,
- viii. Pick up the bag and walk in a straight line out of the room.

When I asked the student discussion group to identify, in order, the physical actions that occurred during a simulation event, their list mirrored the one above (although they had merged steps iv and v as one physical movement). I then showed the group the above list and Hannah agreed, "we do things in that order, yes" and Ivor noted "[the list] is pretty much how to do a scenario". When asked why they felt they did things in this order, Ivor felt that "just doing it [that way] again and again, helps us to learn. [The tutors] help us to learn by getting us to do it again and again in the same way". The control of the student is via the physicality of the simulation event. There is control of the student paramedic's body in the incredibly physical, small movement manipulation during scenarios. The organisation may encourage the body behaviour and movements in a repetitive nature: walk to where the simulated patient is sitting, get down on one knee to speak to the patient, open the treatment bag and take out equipment etc. This is perhaps more easily observed in the drill of how to treat a patient shown in the stroke guideline seen in figure 7.1. The paramedic is encouraged in this guideline to treat the patient in a particular order, even as far as an A B C pathway being used. It brings to mind Foucault's concept of the docile body, passive and ready to receive domination (Foucault, 2003). The drill of a soldier considered by Foucault (2003) is echoed in the drill of the student paramedic during simulation learning. Such obvious physical control, along with the acquiescence analysed earlier suggest that the route to professional status is paradoxically, through the surrender of learner autonomy.

### **7.2.2 Autonomy**

I have tried to argue that to ensure control, autonomy is denied. Autonomy also happens to be a central concept of the ambulance service paramedic. Consider the very first expectation of the health professional, which is sub-headed 'professional autonomy and accountability' (HPC, 2007, p. 5). When I discussed autonomy with the student paramedic discussion group, Hannah felt that autonomy is "why we're becoming paramedics". However, regardless of the professing of the importance of autonomy by the registering body (and students), true autonomy rarely exists. The paramedic works within clinical boundaries, called guidelines but appear to be more like protocols; take the example of how to assess and treat a stroke, seen in figure 7.1.

Figure 7.1 – Joint Royal Colleges Ambulance Liaison Committee (2006) stroke guideline.

## Stroke/Transient Ischaemic Attack (TIA)

**INTRODUCTION**

Stroke is common and may be due to either intracranial haemorrhage or infarction. Over 130,000 people a year in England and Wales have their first stroke, and some 60,000 deaths are associated with stroke annually. Stroke is the third most common cause of death after heart disease and cancer. 85% of strokes are caused by cerebral infarction and 15% by intracranial haemorrhage. Thrombolytic<sup>1</sup> treatment for cerebral infarction needs to be undertaken early to be successful. In order to determine suitability for treatment patients must undergo a scan, therefore, patients need to be transferred to an appropriate hospital. For the benefits of thrombolysis to be most effective it needs to be administered within 3 hours of onset of symptoms. The most sensitive features associated with diagnosing stroke and TIA are facial weakness, arm and leg weakness, and speech disturbance. A TIA occurs when blood supply to part of the brain is briefly interrupted. TIA symptoms, which usually occur suddenly, are the same as those of stroke but are usually short lasting. The risk of a patient with TIA developing a stroke is high and symptoms should always be taken seriously.

**ASSESSMENT**

Assess ABCD's

- May have airway and breathing problems (refer to dyspnoea guideline).
- Level of consciousness may vary (refer to decreased level of consciousness guideline).

Evaluate if the patient has any TIME CRITICAL features – these may include:

- any major ABC problem
- altered level of consciousness.

If any of these features are present, start correcting A and B problems then transport to the nearest suitable receiving hospital. Local arrangements should be in place to ensure that optimal use is made of specialist in-hospital resources (e.g. stroke unit).

- Provide a Hospital Alert Message / Information Call

• En-route – continue patient management (see below)

• Assess blood glucose level. Always check if the patient is diabetic, as hypoglycaemia may present as one sided weakness.

*If there are no TIME CRITICAL features present, perform a more thorough assessment as a brief secondary survey:*

- assess blood pressure because often in the early stages the blood pressure is markedly raised
- assess Glasgow Coma Scale (GCS)<sup>2</sup> on unaffected side – eye and motor assessments may be more readily assessed if speech is badly affected
- assess for presence of speech abnormality, either slurred speech (dysarthria) or problems speaking or with the understanding of speech (dysphasia)
- assess limb power and sensation. May have mainly sensory impairment with numbness or "pins and needles" down affected side
- assess for sudden onset of weakness of the face and arm, as when combined with speech abnormality, stroke is the most likely diagnosis (refer to Table 1).

**Table 1 – FAST Test<sup>3,4</sup>**

<b>Facial Weakness</b>	ask the patient to smile or show teeth. Look for NEW lack of symmetry
<b>Arm Weakness</b>	(motor) – Ask the patient to lift their arms together and hold for 5 seconds. Does one arm drift or fall down? The arm with motor weakness will drift downwards compared to the unaffected limb
<b>Speech</b>	ask the patient to repeat a phrase. Assess for slurring or difficulty with the words or sentence

These components make up the FAST (face, arms, and speech test) assessment that should be carried out on ALL patients with suspected stroke/TIA.

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(JRCALC and ASA, 2006)

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This guideline, published by the national ambulance guideline group and used by all UK NHS ambulance services, allows for very little autonomy. A patient is to be ventilated if they meet fixed criteria for ventilation and they are to be ventilated to a certain level. Of course there may be valid evidenced reasons that stroke patients benefit from ventilation at a certain level within the boundaries, but it doesn't allow for autonomy that deviates from this. Autonomy can also be argued to be relative in such cases but it is my position that normative control, the control inside the culture of the organisation, denies learners autonomy in ways that goes beyond such relative autonomy. Autonomy suggests the ability to decide the treatments, the 'self law' that the translation of the term autonomy would indicate. The paradox is that the paramedic submits to the law of the organisation, via the law of the guideline. True autonomy would allow the paramedic to reflect on the treatment of the patient and decide, based on empirical evidence, whether the treatment pathway was the best for the patient. Other words associated with autonomy, such as freedom and discretion, are also relative. The paramedic has freedom within the guideline in that they can decide whether or not to do something but this is where discretion ends. To continue the example, the choice to ventilate a patient (or not) is where autonomy ends, the discretion to ventilate at a higher or lower rate or not to ventilate when the guidelines 'advise' the paramedic to ventilate, is not to be countenanced. The risks of stepping outside these guidelines and by doing so, adhering to autonomous principles are severe; clinical variance panels made up of senior managers are held regularly. This is in contrast to the statements of the registering body and more importantly, the statements of student paramedic and tutors regarding the aim of being a professional paramedic via the gift of autonomy. In the next section, I want to examine the mechanisms through which students may become complicit in accepting the status quo without too much open resistance.

### **7.2.3 Student and tutor dynamics**

I noted in my field journal that “[Bryony] has a nickname among the other students, she is obviously top dog and fights her corner quite strongly” and the tutors identified some students as, to use their words, “followers and leaders”. The tutors suggested that they had limited influence in group dynamics and Will felt that “some [students] are more manipulative than others; they get their little gang, you know”? This concept of inter-student power relationships may be reinforced by the allocation of a lead student who acts as a kind of trustee of the group. The lead student is given the role of organising their colleagues, telling them when to be in the classroom and ensuring the centre is kept ordered. This quasi-tutor role allows the organisation to keep the tutors from carrying out these time consuming administrative tasks whilst maintaining the perception that the students have ownership over parts of their development. By allowing the student this role, it maintains the

illusion that it is one of their own that maintains order and is responsible for minor aspects of the course.

However, it is clear the tutors have a more prosaic reason for appointing a lead student. Yolande noted that a lead student “helps us to do the admin stuff that we just haven’t got time to do”. It could be suggested that having the lead student structure actively encourages the culture that the tutor (or quasi-tutor exemplified by the lead student role) is the person that is responsible for saying when a student needs to be in the classroom, when they can have lunch and how to act. Ian was lead student during the time I observed his simulation. When asked, he stated that he “felt really good being lead [student], being in charge of the group”.

Whilst some students can thus be used to draw them closer to positions of responsibility within the structure, on the whole, students felt that the power held by tutors was undeniable. As an example and already discussed, they have the power to fail the student but there is some suggestion that tutors could make life difficult for a student on a course of study. Dan suggested that “[the tutors] really got power over you, if you give them shit they can make your life Hell”. Frank agreed that “we all sort of put [the tutors] on a pedestal, we’re all as bad as each other really”. This concept of power held by one person over another has a long history and Raven and French’s (1958) model is particularly pertinent in this situation. When reviewing the legitimate and coercive theories, they have a resonance to the tutor student relationship during simulation learning; particularly the agreement of the group in supporting the position of the tutor (note my amendments):

The more [the student paramedic] perceives his group as supporting [the tutor] in his position, the more [the student paramedic] will perceive that [the tutor] has a legitimate right to that position.

(p. 88)

The more [the student paramedic] perceives his group as supporting [the tutor] in his position, the more will [the tutor] have legitimate power over [the student paramedic].

(p. 89)

(Raven and French, 1958)

The individual student paramedic, seeing their group accepting the will of the tutor, has less opportunity to question that will. This then allows the tutor to have more power and in turn the student paramedic is unable to question that power.

In terms of the specific focus of this research, not one student I talked to had questioned the use of simulation learning in their development. It was accepted as integral to the paramedic development pathway. I asked Ian after he had professed disliked for simulation learning, if he would like to see simulation removed from the course. His emphatic answer was “no, no, no, no, no, no, no, no, no, definitely not on that one”. Ivor in response to my suggestion that he could question the organisation and some of the issues he had highlighted said (albeit tongue in cheek), “yes, that’s a career-limiting move” This is not a reflection on the passivity of the students, merely an indication that the culture that doesn’t actively encourage people to challenge traditional ways of learning. Of course, the students I interviewed may have seen me as part of the organisation and therefore one of the powerbrokers. To challenge what the organisation (personified by me!) may have propounded as imperative to continued employment, may have felt career limiting to the student. Providing the students with the language of critique (not critical language) may have allowed them to fully comprehend the processes that we tend to shroud in a fog of mystery, thus ensuring the divide between student and organisation.

A discussion forum is not unheard of in student paramedic education but the suggestion that individual thought, critique, or honest discourse is encouraged, is perhaps not correct. I asked the student paramedic group “are you ever asked your opinion during the course” the answer was “about what, why would we be asked our opinion”? Hannah felt that “we get asked to fill in the evaluation sheets [at the end of the course] do you mean that”?

I would suggest that all of the students, individually or as a student body, are unheard. Although there may be students who fill in as quasi-tutors or as student representatives, do not have greater influence or power within the organisation. When put to the student paramedic discussion group, the idea that the student *should* have power was as alien as how to change things if given power. Gordon suggested, “we can’t run the courses, that’s what the tutors are there for”. The quote at the beginning of this chapter that the students cannot learn by themselves (they need to steering influence of the tutor) is key to this issue. Natalie argued that “you have to have a tutor telling you what to do, how else can we learn”? The issue here is not merely one of students speaking or tutors listening, it is about the conditions that make possible certain ways of thinking, speaking and interacting that makes for less controlling, more equal relationships in the learning environment.

It is for the student to realise that it is themselves, their knowledge and experiences that facilitates their learning in their development pathway to becoming a paramedic. It is the tutor’s (and organisation’s) role to facilitate that process and then the critical pedagogy paradigm be truly

applied to student paramedic simulation learning. My field journal noted, “it’s clear the tutor is in charge, what student would be foolish enough to challenge the person marking the exams”? The theories discussed in this chapter, those of power and staff and organisation relationships and their links to student paramedic simulation learning, leads to a number of highlighted tendencies. The alterations to practice that may be suggested by the issues in this part of the chapter may be less pragmatic than in other parts of this thesis. Merely drawing attention to these power dynamics may generate debate; it is clearly not about removing the lead tutor role or having the student give feedback to the tutor at the time of the simulation event. It is about initiating a discussion and allowing the voiceless to have a voice, surely the most significant belief of critical pedagogy.

### 7.3 HIERARCHY

*So I think it's the only way, to have someone that knows exactly what needs to be done and point you in the right direction.*

(Ethan)

A subject already briefly explored in this thesis is the concept of hierarchy. This is the arrangement of things on different level, the understanding being that some parts are always above or below others. Hierarchies do not necessarily denote that one aspect is better or worse, just that not all of the parts fill the same space. Hierarchy is used widely in scientific and sociological classification, consider Maslow’s human needs classification or the animal world classification of Linnaean’s taxonomy. Some important aspects of hierarchies are that they must all have a root (an origin) and that this root is always superior to the other parts of the hierarchy. That is, superior in the visual sense of being more elevated, not superior in the sense of being greater or more valid. This is not an unknown concept in paramedicine; bodily planes and structures are contextualised in this way. So when standing, the head is superior to the chest. This is just a positional fact, not a comment on the importance of the head or the worthlessness of the chest. However, the hierarchy discussed in this part of the chapter is very much to do with one section or group or person being perceived as better or more important, than another.

Previously, I discussed the tutor-student dynamics. It is true that tutors also have a power relationship among themselves and as with other parts of the organisation, tutors wear rank markings and have an obvious rank structure, which will be explored further, in this section. However, the tutors that I spoke to all suggested that they were equal parts of the team. Will noted that “we are all in it together, no one’s the boss here; well they are but...you know”. Regardless of how the ambulance education centre is organised, whether tutors are at the centre full-time or

partly or wholly operational, there is always someone in charge and someone with ultimate responsibility for the centre and the way it is run. This person may be a lead tutor or centre manager or course coordinator but regardless of nominal role, they are in charge and have responsibility for staff within the centre. So in this limited sense, power and responsibility changes hands regularly but in quite major ways and there is a strong sense of hierarchy amongst the organisation's members.

### **7.3.1 Overt symbols**

The student paramedic works in a system that actively encourages power relationships, with such overt symbols as rank markings and ordered rank structure used; these are discussed further later in this chapter. David noted “I know that the paramedic will be boss when I get [on the road] and Natalie insisted, “even though I'll be [a] qualified [paramedic], there will always be someone more experienced”. It appears that student paramedics are fairly low in the paramedic hierarchy with the supervising clinician placed in a position of clinical importance. This can be directly related to the relationship between the tutor and student, with the tutor wearing rank markings and having a different rest and working area to the students. Zach felt that “we have to be a bit ‘us and them’, we can't get too close”. However, when reflecting on my own experience as a student paramedic, I can see that things have changed in the last decade or so. Gone are the different colour shirts once worn to delineate officers and operational staff. Even the term officer is rarely used now, the usual term now being manager. Student paramedics used different terms for the staff that facilitated their development, David and Fred called them “assessors”, Graham called them “tutors” and Helen called them “trainers”. A student no longer stands when a senior staff member enters the room and students address the tutor by their first name not their title and surname as I had to. Fred and Graham both referred to the tutor by their first name during the simulation and Yolande was aghast at the idea that the student would refer to her by her surname and noted, “we're not in the army”!

### **7.3.2 Rank markings**

Although the concept of uniform as front has been explored in chapter five, it is clear that uniform and more specifically what rank markings are worn on the uniform, identifies who holds power in ambulance systems. Rank marking is most obvious on epaulettes worn on the shoulders of staff shirts and jackets. The rank markings are usually gold thread embroidered on a dark green background providing a dramatic and quickly identifying focus for staff. Of course these rank markings mean little to the public or even to other services; they are entirely individual to the

individual ambulance service. However, they do not usually denote role (merely rank), which in most cases is related to pay banding; they generally do not denote clinical skills. I can think of several senior members of staff, who hold the equivalent of the old style Millar qualification as discussed earlier in this study, that wear rank markings similar to those seen in figure 7.2. To provide a comparison, my own rank marking is shown in the bottom left of figure 7.2 (a crown and a pip) and the course tutors generally wear one pip on each epaulette, with course leaders wearing two pips.

*Figure 7.2 – Typical ambulance service rank marking epaulettes.*

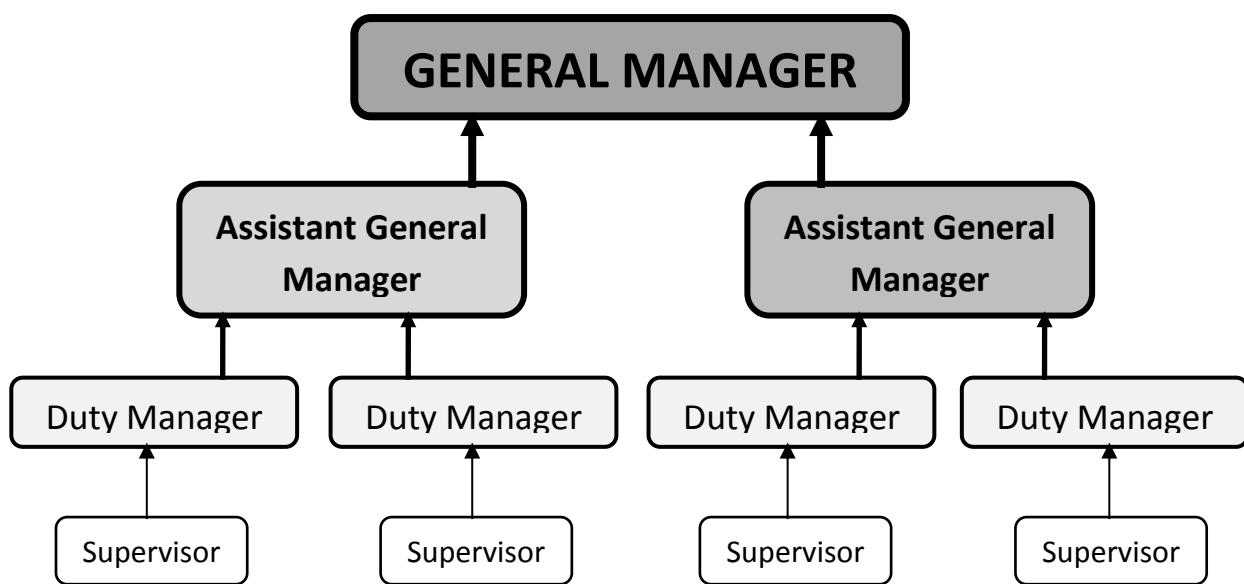


Zach felt he wore his pips so that “the students know we’re in charge” and noted his own higher rank structure compared to the two other tutors in the room. Will, who had one pip on his epaulette compared to Zach’s two pips, stated “well Zach’s in charge, isn’t he?” This caused laughter among the tutors as Zach mock-polished his epaulettes. Of course the notion behind epaulettes is that the person that holds power can be easily identified and staff can adjust their behaviour accordingly. However, many senior managers now resort to wearing civilian clothes whilst non-operational, perhaps in an attempt to suggest a non-power relationship. However, I would suggest that this has just become an alternate uniform. Natalie noted that “when someone turns up on station in a suit and we don’t know them; we’re always on our best behaviour because you can bet it’s a [senior manager]”. The tutors and students however, wear a clearly rank marked uniform.

### 7.3.3 Chain of command

The chain of command is used widely in ambulance services. This chain suggests a linear communication strategy and I believe that this is the case. Command structures are expected to have ranks and they are also expected to have strict rules about who makes the decisions and who holds the power. The example command structure for one county, shown in figure 7.3, identifies the linear structure of the command.

Figure 7.3 – Typical command structure of a county or area.



As already seen in the data, the students have a very clear grasp of the chain of command during their development. Alan felt that “you have your [General Manager], your [Assistant General Manager], it’s the same here and in all bits [of the ambulance service]”. Yolande noted “I have my boss, my boss has his boss, all the way to [the chief executive].

### 7.3.4 Tutor hierarchy

This concept of hierarchy can also be clearly seen in the ambulance education centre, as discussed above. All of the tutors I observed had rank markings denoting a management role, even when that was not their usual or full-time position. Zach, the tutor in charge, perhaps articulated this hierarchy among tutors, stating, “the buck has got to stop somewhere”. Certainly Michael felt that “we know

[the tutors have] their bosses, even [in the centre]. In my day-to-day observation of the student paramedics in the education centre, I noted that they responded to those that they perceived held power, most visibly denoted by rank markings. However, perhaps this is illusory, when I wear uniform I make a habit of not wearing epaulettes that denote my position, just the ambulance service I work for. This may make me feel better about not dominating the student but they clearly know what my role is by looking at my identification badge. I have walked into an ambulance station without rank markings and have observed a change in behaviour from a member of staff once they have read my role on my identification badge. So perhaps the use of ranked epaulettes is just a more overt way of stating the position in the hierarchy. All of the tutors I spoke to in the discussion group were almost too enthusiastic about speaking to me. My opening line was “thank you for doing this” and Will, Yolande and Zach all talked over each other trying to convince me that it “wasn’t a problem” and they were “happy to do it”. Perhaps Will was most honest when he jokingly said “anything for the boss”.

#### **7.4 SUMMARY OF THE CHAPTER**

Of all of the chapters in this thesis, this was the one that proved most troublesome. I found the concepts alarming and shook my ambulance tutor head at these radical and often subversive ideas...*‘what, the student should be an activist and the tutor should positively encourage this’?* Of course, these were my own value judgements and ideological issues, I have always considered myself an outsider in an insider’s culture; an educator fish in a sea of clinician sharks. To keep the metaphor, there were even some sharks that dressed up as fishes and learned to speak fish language but I recognised them for what they really were. How annoying then to discover that I have (had) less fish in me than I would have liked! However, of this entire thesis, the themes I have explored in this chapter are the ones that have changed me most as an educator. I had believed in student empowerment as a concept but had limited vocabulary to express my thoughts and no notion of how this could be applied to my own practice.

As a feminist educator in the patriarchal system, I have my own bias and I believe this is acknowledged. Critique rather than critical language can be embedded in the simulation learning environment, allowing all to have an equal and effective voice. Hierarchical structures exist and to deny so, may be perpetuating an unrealistic and unachievable goal but to acknowledge this may be a sufficient start. The simulation event takes place in a hierarchical structure, with an imbalance of power and this is beyond question; the all-knowing tutor represents the all-powerful organisation.

The organisation holds power beyond the power to terminate employment; the organisation controls all aspects of work life, from what to wear to how to treat a patient. This is encouraged by the use of hierarchical tools such as rank markings and clearly delineated structures. This all serves to keep the student paramedic within the structures that suit the ambulance service, the student is required to adhere to these structures and this adds to the stress felt. The simulation event is a fundamentally organisation-controlled process and to question this would be completely alien for both the student and tutor. The student (and tutor) does what the organisation expects of them and to step outside of the structure would be: a) inconceivable or b) if considered, then firmly dealt with. This, of course, makes the student paramedic highly unlikely to challenge the oligarchical system and provides an atmosphere of fear. Although for now, it is sufficient for me to view the event through the lens of critical pedagogy and by highlighting issues, allow others to build on these foundations. Changes, however, are essential to the themes of this study and some possibilities and suggestions are outlined in the next chapter

## CHAPTER EIGHT – CONCLUDING THOUGHTS

**Author**      *Imagine if we removed scenario learning from the course entirely.  
If I said 'OK, come back and do this course, we won't have any  
scenario learning at all'.*

**Ian**            **[Incredulously] You wouldn't have a scenario?**

### 8.1 INTRODUCTION

This chapter of the study aims to bring all of the discussions and thoughts in this thesis together and apply them to paramedicine and the wider education community. This study was always intended as a heuristic project. It was written as a way to solve problems I observed over years of undertaking and leading simulation events and this research challenges some previously widely held beliefs about simulation learning. Although traditionally this chapter in a thesis is used to challenge or endorse the work of previous researchers, what became apparent very early in this research process is that scant literature exists on many of the themes that I have explored. I have tried to relate some themes to similar education environments by linking to nursing, adult education, even military and vocational settings but it is apparent that student paramedic learning is unique. What makes it so unique (in my opinion) is that much practice has not been thoroughly and properly reviewed, discussed and researched. As one of the few paramedic academics that has explored education issues, I was the envy of some of my doctoral colleagues. I was writing in a virgin field and therefore had so much more scope than those that had to explore a very narrow topic in an overcrowded sea of published literature. However, I have not felt quite so lucky and by starting with a blank canvas, I have had to take very broad-brush strokes and I feel that some of the finer detail may have been missed; this has been one of the more frustrating aspects of this research. However, there is a section in this chapter that highlights possible future research questions and areas.

As discussed in chapters one and two, clinical issues and problems dominate paramedic theory and research and some consideration of why this study is so important is necessary. One of the most exciting changes in contemporary emergency care is the use of evidence-based medicine, although it must be accepted that this use of evidence based on research is not widely embedded in paramedic programmes. Tippett, Woods, FitzGerald and Clark (2003) suggested that paramedic research is still considered a speciality, staffed by academics with little or no experience of actual patient care.

O'Meara (2006) advised that only when academia and paramedicine are combined can the future of research in the out of hospital arena become certain and I would agree with that sentiment. This study will hopefully go some way to addressing the paucity of paramedic research and will provide a lead to those staff who wish to undertake profession-changing study. Although any paramedic education research is to be welcomed in a relative empty field, the importance of experiential learning and its link to such a practical vocation that requires a deep knowledge and understanding of clinical matters makes this study significant. Kolb suggested, "learning is the process whereby knowledge is created through the transformation of experience" (1984, p. 38). If this suggestion is adhered to, the knowledge necessary to become a paramedic is created through the experience of simulation (the experience necessary to ensure that the student paramedic is 'road ready').

## **8.2 NEXT STEPS**

To truly apply this research to paramedic practice, I have discussed the learning arising from chapters five, six and seven with the key stakeholders, these stakeholders being student paramedics, tutors and managers. The ideas and suggestions that emerged from the analysis of the data were put to a small workshop-type discussion group. The stakeholders were asked for proposals as to how these themes highlighted, could be applied to the simulation event for future cohorts of paramedic students. I asked for recommendations for each theme highlighted from the group and these were noted on boards around the room and collected at the end of the session. To ensure that all were facilitated to give ideas and suggestions both as a group and in a confidential manner, my telephone number was placed prominently in the room and the group was encouraged to text suggestions to my mobile telephone. However, throughout the data collection and writing of this thesis, I have maintained the initial research questions as a driver of the process and therefore, it is appropriate that the conclusions reached are explored further.

## **8.3 RESEARCH QUESTIONS**

- i. *Why is simulation perceived to be invaluable for paramedic education?*
- ii. *What is the student and tutor experience of simulation learning opportunities?*
- iii. *What modifications or alterations to simulation learning can be suggested by this study?*

### **8.3.1 Is simulation essential?**

This study highlighted the need to give student paramedics and tutors an opportunity to share their views and the data have clearly allowed staff to articulate how they feel about simulation learning. I have used the student quote at the beginning of this chapter, as I feel it shows how student paramedics feel about simulation during their development. Ian, the student who is quoted, had just spent several minutes explaining how much he hated simulation learning as part of the course. He explained how he felt it contributed little to his development and how it caused him to feel physically ill. I asked the question that I asked all of the students, that if simulation was removed completely from the course, how would they feel? The first few times I asked this question, usually after the student had professed their negative feelings about simulation, I was surprised that students reacted with shock at the suggestion that simulation be removed from the programme. Ian reacted physically, as if I had suggested a ridiculous and unworkable fantasy. Remove simulation from student paramedic development, how is that possible, that would be like removing the oxygen from the air, it is just not possible? I think that may be the fundamental reason why simulation is perceived as invaluable, that to consider a development course without it may be so wildly unthinkable as to cause even more anxiety than the simulation process itself.

### **8.3.2 Is simulation invaluable?**

The initial research question asks why simulation is perceived to be invaluable for paramedic education. I thought this would be clearly identified in the data but proved more multi-faceted than I could have imagined. However, I believe that I have explored reasons why simulation is *perceived* to be invaluable, a change in context that has allowed me to fully explore simulation learning. It is certainly true that simulation is perceived as invaluable for a number of reasons explored in this research. Without doubt, the students cannot envisage a development pathway without simulation regardless of how they may feel about the experience. There is some evidence to suggest its use and if the student feels that simulation is invaluable despite the anxiety it provokes, then surely it would be inappropriate to take the decision to remove it contrary to their wants. However, when exploring why simulation was *perceived* as invaluable, the data suggested that the students feel that simulation prepares them for life on the road as an operational paramedic. It allows them to experience the care and treatment of a patient. This rite of passage allows them to take their place among their colleagues to show they are strong enough to take the rigors of life as a paramedic. I believe another reason that students feel simulation is invaluable is that the power relationships

within the organisation positively encourage this view. The student paramedic would not even consider challenging the institution, so it may be perceived as invaluable because this is what the organisation perceives it to be. The data have clearly highlighted the link between simulation learning and simulation assessment and it is interesting to note that, when I wrote the research question, I meant simulation only in terms of simulation learning but have found through analysis of the data that a more appropriate approach would have been to split this question into two parts: a) why is simulation learning perceived as invaluable and b) why is simulation assessment perceived as invaluable?

### **8.3.3 What is the student and tutor experience of simulation?**

The student experience of simulation learning is clearly not a pleasant one, explored in terms of the performance aspects, the association of assessment to learning and the control of the organisation. The exploration of how students feel during the simulation experience is explored in chapters five, six and seven but the overwhelming theme is that students fear simulation. This may be irrelevant and it may not be that the student should *like* the learning experience. Of course, this anxiety may prepare the student for the undoubted stress of paramedicine but I believe that altered simulation learning can be made less unpleasant rather than more pleasant.

### **8.3.4 How can simulation be altered?**

The final research question, which asks what modifications or alterations to simulation learning can be suggested by this study, is perhaps the longest part of this chapter. I believe simulation can be significantly altered based on the evidence explored in this study. The next part of this chapter explores the ideas and suggestions generated by earlier chapters as put to a discussion group of stakeholders.

## **8.4 CHANGES TO SIMUALTION**

### **8.4.1 Performance and simulation**

Currently, a script is used during simulation learning. The data suggested that this aids the student paramedic by allowing them clear frameworks in which to help patients. The script is a 'crutch' (to use a medical metaphor!), to be used until the student has progressed enough to formulate their

own script. The script currently in use is widely used and widely acknowledged, it just is not formalised and the student paramedic is expected to learn the script as they progress. It is this that may be the issue, not that a script is used but that nobody mentions it and students are expected to pick the script up as they progress. However, if the student is given the script to learn prior to the simulation, it may help to embed this already widely used strategy. The student could be given the script in a more formalised manner to allow them to know what they should be saying prior to undertaking the simulation event.

The data suggested that the student might have difficulty adapting to the changed role, first from non-student to student and then from student to paramedic. The student paramedic, having no or very little time experiencing operational shifts during a development course, is not prepared for these changes. As seen in chapter five, adapting to role is more complex than merely acting the part of paramedic. However, if the student were to be supernumerary (in other words, be an additional member of the crew having no direct input into a patient care pathway) this may allow them to experience the front of being a paramedic prior to having to put on the front of actually being a paramedic.

It became clear that the student paramedic does not have a formal period or time to practise prior to the simulation event. However, if the course of study included pre-set rehearsal or practise periods, the student could spend some time prior to the simulation event preparing. This also applies to informal rehearsal. The student paramedic visualises simulation events in an informal, unstructured way already. To aid this, the student paramedic could be given set scenarios to work through during a course of study. A set of visualised scenarios could be written, with a discussion with a student group on how to visualise them.

A fundamental issue with the simulation experience is the lack of reality. As discussed, reality of the setting helps allow the student paramedic to ‘become’ the paramedic during the simulation event and the student requires the simulation setting to be as close to real life as possible. With some minor alteration, education centres can reflect the interior of a patient’s house; consideration to furniture and fittings may help provide the illusion of the paramedic’s main working environment. Greater consideration could be given to using an ambulance as a simulation setting to allow the student paramedic to be familiar with these unique surroundings prior to becoming operational. The hospital environment could also be visited to allow greater familiarity.

#### **8.4.2 Student experience of simulation**

It is the position of this study that the student paramedic finds the simulation event to be anxiety provoking. It seems an obvious argument that anxiety is stressful but it follows that if simulation is anxiety provoking and anxiety is stressful, then simulation is stressful. The causes of the anxiety felt by the student paramedic may be specific and individual to the student (and has been explored at length in chapter five of this study) but to acknowledge this anxiety may go some way towards easing pre-conceived ideas. Just accepting that the student paramedic simulation experience may be stressful contradicts some previously published literature and therefore gives an alternate view of the simulation paradigm and allows the students to be heard.

The feedback system, used in student paramedic simulation is generally one-way; the tutor gives and the student receives. However, by allowing all involved in the simulation to have an equal and equally heard voice, the feedback process may then be made more acceptable to both student paramedic and tutor. Feedback could become a two-way process with peer-assessment and self-assessment strategies used. The student paramedic links the simulation learning event to the simulation assessment event and therefore regards them both as being carried out under exam conditions; this was seen clearly in the data. By having the same tutors in the same environment, using the same proformas and same structure, the student paramedic may be encouraged (albeit without malice) to link the simulation learning experience to the simulation assessment experience. Although this may be done to provide comfort to the student when assessment is required, with the hope that the student will link the learning forward to the assessment, it may have the opposite effect and cause a backward link of assessment to the learning. However, the events could be made less alike to try and break the student-identified link between learning and assessment. Peer-assessment and self-assessment were mentioned as possible strategies, with all parties working together to achieve the aim of effective patient care. There is also a possibility that the assessment link could be removed by removing simulation assessment. However, there is no suggestion that this would remove anxiety entirely, as the reasons for anxiety were multi-faceted as outlined in this study.

#### **8.4.3 Control and hierarchy in simulation**

There is clearly an uneven distribution of control within the simulation event. The student paramedic appears to be without power at all and the tutor (embodying the wider organisation) has

all of the power. The student (and tutor) may feel comfortable in this situation and it is not for this study to speak on behalf of the student paramedic. However, it is concerned with giving the student paramedic and tutor a voice and embedding a language of critique into the development of the student may allow them to decide if they feel oppressed by the system. Even just shining a spotlight onto the simulation event and the relationships within it, can be helpful to the control debate.

The visible aspects of hierarchy observed, rank markings as the most obvious example, may allow the student to identify who holds power in the organisation. Although the visible signs of hierarchy may allow the student paramedic to quickly identify who has power in the organisation, the complex power relationships that exist between student and tutor may mean that the tutor does not need to show they are in a position of power in the development process. Everyone in the system knows who holds the power and who does not in the simulation process. There is as much of a hierarchy in a simulation event with just student and tutor as there is in an operational area. However, this study was not written (nor is it my intention) to bring about the destruction of the current ambulance structure. I am a part of that organisation that encourages rank and defined roles and I use the system to my advantage at times. This study is concerned with identifying these issues, not necessarily challenging them.

## **8.5 LIMITATIONS**

I think it is important to acknowledge and describe the limitations of this study and I recognise that the limitations and deficiencies are many. One of the most significant limitations is that of human variability; everyone is different and perceptions are individual. Without having a separate thesis for each individual student involved in this study, some generalisation had to occur. What may be a verbalised anxious event to one student may be a completely different experience but the same verbalisation by a different student. The size of the student population observed may also be regarded as a limitation and undertaking a non-professional doctorate may have given me a greater opportunity to speak to a wider range of students in a wider range of settings with a wider range of backgrounds. No student paramedics educated via the foundation or bachelor degree level qualifications that exist were talked to as part of this study and I feel that their viewpoint may have provided an interesting addition to the data. The wide variation in the scenario settings I observed may also be a limitation and the ideal might have been to observe and discuss with the students one set identical simulation, all with the same crewmate and the same tutor. What also may be regarded as a limitation, that the evidence on this subject is being published at an exponential rate and

therefore possibly makes these findings obsolete, I do not regard as a limitation. I welcome the greater range of literature published, however much anxiety it may cause prior to defence of the thesis. The limitation of participant reaction is one that must be acknowledged. The students may have said what they felt I wanted to hear and done what they felt I wanted to see, regardless of how I tried to negate this influence. One of the most troubling limitations is how much or how little of (or where) this research is disseminated. To have the thesis gather dust on a shelf concerns me greater than any other aspect, as this study was written to provoke change in student paramedic simulation learning. Finally, my own perceptions may have limited this study. The breadth and depth of this thesis is anchored in my own experience and, because of the nature of the methodology of this study, is partly based on my direct input.

## **8.6 RESEARCH QUESTIONS GENERATED BY THIS STUDY**

It is clear that this research should generate more questions than it answers. It is not a discourse on student paramedic simulation learning, it is the beginning of a discourse on student paramedic simulation learning. When reviewing the issues and suggestion of this chapter, some subsequent research is needed and I would suggest that the following fundamental question should be addressed.

**Does altering the simulation experience in the ways highlighted in  
this study, make the simulation learning more effective?**

The specific aspects of this question can be better explored with these sub questions:

- i. *Do altered simulation strategies help alleviate the anxiety felt by the student paramedic?*
- ii. *Does the giving of a script prior to the simulation help prepare the student paramedic for the simulation learning experience?*
- iii. *Can the change of front be predicted and developed to allow the student paramedic to experience this prior to having to alter the role when operational?*
- iv. *Does the change of setting to mirror actual operational environments, allow the student to develop better during the simulation learning experience?*
- v. *Does the recognition of self-critical tendencies allow the tutor to encourage non-critical language?*
- vi. *Does altering the feedback process ensure a more valid simulation experience?*
- vii. *Is the rite of passage concept causing the student paramedic psychological harm?*
- viii. *Does separating the learning and assessment paradigms in student paramedic simulation make the experience less anxiety provoking?*
- ix. *What motivates the student paramedic to undertake the simulation learning experience?*
- x. *Does dissociating from the simulation learning experience cause the student paramedic psychological harm?*
- xi. *Can the principles of critical pedagogy be embedded in paramedic simulation learning?*

- xii. *Are hierarchical structures helpful in the student paramedic learning environment?*
- xiii. *Does altering the range of learning tools promote inclusion in student paramedic simulation learning?*

I am aware that many of my colleagues may want to see more outcome-driven research indicators and I am sure that I could change some of the wording of all of the above questions to make the student perform quantitatively measurable skills and competencies. However, this is one of the general paramedic literature issues that generated this research in the first place and has been discussed in this study. Paramedic research needs to go beyond measuring performance in terms of how lives can be saved or conditions improved by carrying out an intervention. I would argue that scant consideration is given to the possibility that the feeling of the paramedic is just as important to patient (and staff) outcome. Treating a patient may be so much more than physically identifiable tasks and the paramedic's perception of the patient may impact the care as much as any physiological readings. Staff health, and particularly psychological health, is often overlooked in ambulance systems. There may be counselling services and tutorials for student paramedics to feedback to staff but I am not sure that anyone has asked in any depth (and certainly not with any methodological framework) how the student paramedic feels about the simulation learning experience, until now.

## **8.7 CONCLUDING COMMENTS**

### **8.7.1 A study of firsts**

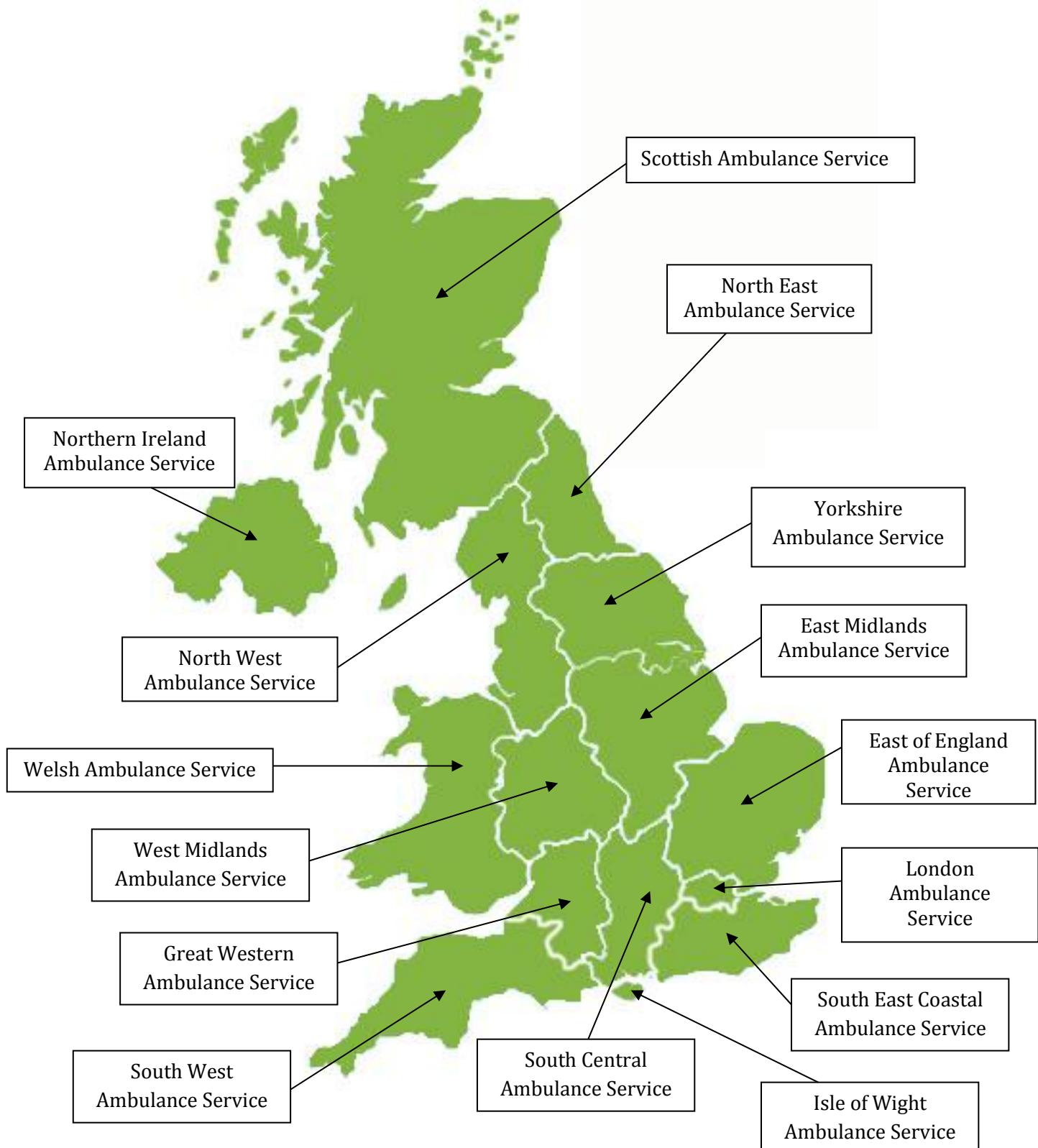
This study has been written specifically to allow the wider ambulance education community to consider aspects of student paramedic simulation learning that may not have been previously thought about. There is a significant gap in the literature on paramedic simulation learning and performance and I feel that the themes highlighted in chapter five are the first to closely consider simulation learning related to the metaphor of performing. There is scant evidence on student experience of simulation learning beyond very narrow quantitative indicators and this study goes some way to addressing that gap. This thesis is the first study where these themes have been explored in relation to student paramedic simulation learning, so it could be argued that the literature was so scarce that by just doing *any* research it has improved the field. However, that has never been the point of this study, it is not merely to achieve a doctoral degree or provide a product because there is little to compare it to. I believe that this research should be a real and pragmatic review of current student paramedic simulation learning that alters practice.

### **8.7.2 Final reflections**

My own reflections on this research are worth pondering and I must admit there may be a slightly evangelical tone to much of this study as I have always felt passionate about simulation. I feel it is a worthwhile and useful experience that needs exploring further. My own process, my own (to use that tried and tested emetic) ‘journey’ has allowed me to take a more objective view of the key themes that have been highlighted by the data. If there is one conclusion I have come to, over the years of being immersed in the data, is that this small piece of work should be just the beginning. It should be the start of a greater acknowledgment of education theory in paramedic development and a greater acceptance of paramedic education in the wider adult learning environment. One quote from the very start of my field journal, I think sums this study up better than any other:

*I think we [ambulance services] use scenarios because they are easy to organise, to run, to evaluate. The students don't seem to know why we do them, the tutors can't articulate why they are so important and I'm not entirely sure that even I know why we do them. I want to make sure that all of this work isn't just for show, that it starts the discussion on paramedic simulation and if it's helpful we keep it and if it's not, I hope we [ambulance services] are humble enough to recognise that things need changing.*

**APPENDIX A**  
**NHS AMBULANCE SERVICES IN THE UNITED KINGDOM**



**APPENDIX B**  
**LETTER CALLING FOR PARTICIPANTS**



**To All Student Ambulance Paramedics**

I am currently completing a doctoral degree at the University of East Anglia. In order for me to achieve this, I am researching student behaviour during scenario learning.

I am conducting a series of observations during student scenario learning sessions and follow-up interviews; your views and participation are vital to my research and I would appreciate your participation.

If you are willing to let me observe your development and would be willing to then spend a short time giving me your views in an 'interview' type format, please can you sign the attached participant form.

If you would like any detail on this research, please contact me; details are below.

A handwritten signature in black ink, appearing to read 'Natasha Taylor'.

**Natasha Taylor**  
Telephone number: 0783 424 9851  
E-mail address: [natasha.taylor@eastamb.nhs.uk](mailto:natasha.taylor@eastamb.nhs.uk)

**APPENDIX C**  
**PARTICIPANT CONSENT FORM (STUDENT)**



**To All Student Ambulance Paramedics**

I am currently completing a doctoral degree at the University of East Anglia. In order for me to achieve this, I am researching aspects of simulation learning. I am interested in this topic because scenarios are such an integral part of paramedic education with limited paramedicine research base.

If you agree to participate in this research, it will mean that I may observe some of your scenario learning sessions. I will **not** be assessing your clinical skills; it is merely to help me understand how students like you experience these sessions and whether there may be ways in which we could improve the learning experience during these sessions. I would also like to interview you after the session, to help me understand how you perceived the experience.

All information gathered would be dealt with in the strictest confidence, there will be no way to identify you and only I will have access to the information collected. You are not obliged to participate and if you would rather not be part of the research, you are entirely free to do so. However, if you feel you can participate, please can you sign the attached participant form to indicate that you understand what to expect. You can also decide to withdraw from the research at any time and this will not affect you in any way.

If you would like any further details on this research, please contact me; details are below. You can also contact my research supervisor, Dr. Esther Priyadarshini (01603 – 592858) at the University of East Anglia if you have any further queries or complaints.

A handwritten signature in black ink, appearing to read 'Natasha Taylor'.

**Natasha Taylor**

Telephone number: 0783 424 9851

E-mail address: [natasha.taylor@eastamb.nhs.uk](mailto:natasha.taylor@eastamb.nhs.uk)

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**Participant consent form**

Please tick the relevant boxes; you may tick none, one or more boxes.

- I have read the information sheet and understand what may be expected of me as a research participant. Any information I give will be held in the strictest confidence and will be entirely anonymous.
- I consent to being observed during paramedic training.
- I consent to being interviewed about the scenario learning situations.
- I consent to the interview being tape recorded.

Name:..... Signed:..... Date:.....

**APPENDIX D**  
**PARTICIPANT CONSENT FORM (TUTOR)**



**To All Tutors**

I am currently completing a doctoral degree at the University of East Anglia. In order for me to achieve this, I am researching aspects of simulation learning. I am interested in this topic because scenarios are such an integral part of paramedic education with limited paramedicine research base.

If you agree to participate in this research, it will mean that I would also like to talk to you as part of a discussion group to help me understand how you perceive the simulation experience.

All information gathered would be dealt with in the strictest confidence, there will be no way to identify you and only I will have access to the information collected. You are not obliged to participate and if you would rather not be part of the research, you are entirely free to do so. However, if you feel you can participate, please can you sign the attached participant form to indicate that you understand what to expect. You can also decide to withdraw from the research at any time and this will not affect you in any way.

If you would like any further details on this research, please contact me; details are below. You can also contact my research supervisor, Dr. Esther Priyadarshini (01603 – 592858) at the University of East Anglia if you have any further queries or complaints.

A handwritten signature in blue ink, which appears to read 'Natasha Taylor'.

**Natasha Taylor**

Telephone number: 0783 424 9851

E-mail address: [natasha.taylor@eastamb.nhs.uk](mailto:natasha.taylor@eastamb.nhs.uk)

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**Participant consent form**

Please tick the relevant boxes; you may tick none, one or more boxes.

- I have read the information sheet and understand what may be expected of me as a research participant. Any information I give will be held in the strictest confidence and will be entirely anonymous.
- I consent to being interviewed about scenario learning situations.
- I consent to the interview being tape recorded.

Name:..... Signed:..... Date:.....

## APPENDIX E

### THEME CODING EXAMPLE

Natalie (shown below as student N) in the left column, stated that she felt very nervous. Michael (shown below as student M) stated he felt very nervous.

M	Erm...think it was better yesterday coz I did two good ones yesterday, my problem is now, I've failed one, so that's				
M I felt very nervous, you know...going in there was just very nervous					
M	I have two satisfactory ticks, went through I got two scenarios, they both got a tick...erm...like 'right fine'...				
M	...my judgement or actions on a job have never been questioned and I've only ever had good feedback...if I got to t				
M	So everyone wants to get it done and out the way first time, don't you, don't want to drag it on for twenty times or				
M	there's such a fake environment, you sort of flow off your patient a lot of the time, whereas these sort of scenarios,				
M	You've got to, sort of, close your eyes and go 'right pretend that person is like that' not how they really are so that'				
M	you sort of feel it's a very fake environment, so you don't wanna sort of make yourself look stupid but you know yo				
M	To get you into that head space of looking after your patient, doing it automatic with what you're doing and to mak				
M	You mentioned you did scenarios or simulation learning at school - That's right, drama classes and things.				
M	you're trying to act something out				
M	there isn't much you can do, at the end of the day you need to have someone critiquing what you're doing				
M	you still need to go through the process of it to actually know where your shortcomings are				
M	You can't just show someone how to put a drug into a syringe, you can write it out fine but actually doing when you				
M	sometimes scenarios aren't exactly how you'd it but you need to pass the exams or do it how they expect you to do				
M	the situation is a fake situation so it's actually quite difficult to draw in surroundings and act with that, you know, a				
M	Well we're acting, we're play acting a scenario....the...the...the patient's acting and so therefore we're acting with v				
M	it's good in the way that you start to understand the language that you've got to use				
N Yeah, it was OK, I felt very nervous					
N	you do have to practice it, you can't just be thrown out there and expect it...it...to do it, we do need to this				

These two quotes were put together with others of a similar nature by highlighting them and then moving them all to a tab of an Excel spread sheet where all similar quotes were gathered. Each tab was then grouped together with others of a similar nature.

A	I was sort of in a panic mode				
B	it was a little bit nerve wracking				
C	it was pretty nerve wracking				
D	uncomfortable				
E	I was very nervous				
F	I was a bit apprehensive				
G	it was nerve wracking				
I	iw was just...nerve wracking				
J	yeah...I was really nervous				
K	oh...just extremely nervous				
L	I was quite uncomfortable				
M	I felt very nervous, you know...going in there was just very nervous				
N	Yeah, it was OK, I felt very nervous				

**APPENDIX F**  
**EXAMPLE SIMULATION SHEET**

<b>SCENARIO FEEDBACK FORM</b>				
<b>Scenario setting</b>		<b>Comments and written feedback</b>		
<b>Approach and global overview</b>				
Scene safety				
Patient position and appearance				
Key points: crew safety, clues to assist in the gathering of patient history, patient response				
Primary survey				
Methodical and systematic				
Appropriate to patient needs				
	Patient presents with:			
<b>A</b>				
<b>B</b>				
<b>C</b>				
<b>D</b>				
<b>E</b>				
Key points: evidence of appropriate interventions must be displayed following assessment				
<b>History taking</b>		<b>Delete as required</b>	<b>Comments and feedback</b>	
Events leading up to		Yes	No	
Past medical history		Yes	No	
Medication		Yes	No	
Social history		Yes	No	
Family history		Yes	No	
S.A.M.P.L.E.		Yes	No	
P.Q.R.S.T.A.		Yes	No	
Functional enquiry		Yes	No	
Other		Yes	No	

<i>Secondary survey (if appropriate)</i>				
<i>Focused on chief complaint</i>				
<i>O.S.C.E.</i>				
<i>Clinical decision making (student must justify interventions, using underpinning knowledge)</i>				
<i>Comments:</i>				
<i>Interventions - management</i>	<i>Delete as required</i>		<b>Comments and feedback</b>	
<i>Clinically safe</i>	<i>Yes</i>	<i>No</i>		
<i>Applied best practice</i>	<i>Yes</i>	<i>No</i>		
<i>Appropriate interventions</i>	<i>Yes</i>	<i>No</i>		
<i>Delegated tasks</i>	<i>Yes</i>	<i>No</i>		
<i>Demonstrated teamwork</i>	<i>Yes</i>	<i>No</i>		
<i>Infection control guidelines followed</i>	<i>Yes</i>	<i>No</i>		
<i>Manual handling</i>	<i>Yes</i>	<i>No</i>		
<i>Other</i>				
<i>Feedback given?</i>	<i>Yes</i>	<i>No</i>	<b>Satisfactory</b>	
			<b>Not satisfactory</b>	
<i>Student name:</i>	<i>Student signature:</i>			
<i>Assessor name:</i>	<i>Assessor signature:</i>			

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